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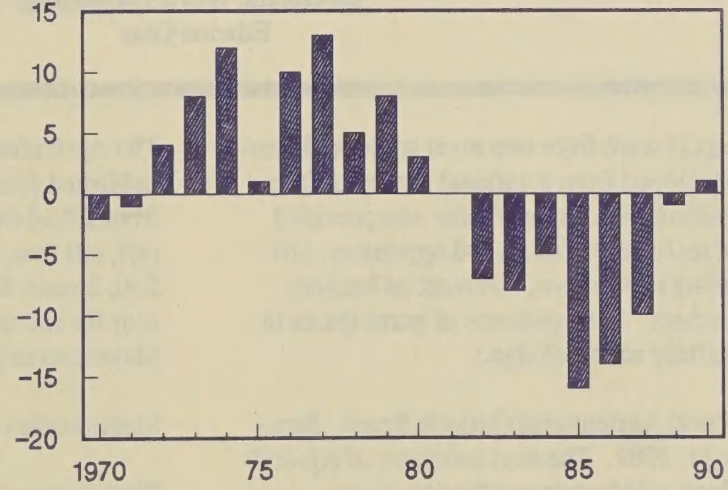
Agricultural Land Values and Markets

Situation and Outlook Report

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**1989 Real (Inflation-adjusted) U.S. Farmland
Values Show First Increase Since 1980**

% change from previous year



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Basic data in this report were from two main sources. Farmland values were developed from a national survey of farmers and ranchers. Information on farm sales was provided through a survey of real estate brokers and appraisers, officials of Federal lending institutions, commercial bankers, and farmers and ranchers. The assistance of participants in both surveys is gratefully acknowledged.

Approved by the World Agricultural Outlook Board. Summary released June 21, 1989. The next summary of *Agricultural Resources*, which will feature production inputs, particularly farm machinery and energy, is scheduled for release on August 8. Summaries and entire situation and outlook reports, including tables, may be accessed electronically. For details, call (202)447-5505.

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ERRATUM:

The following material was omitted from "Recent Trend of Farmland Values in the Corn Belt" on page 14 of the June 1989 issue of the Agricultural Land Values and Markets Situation and Outlook Report:

Note that the percentage increase in values slowed during 1977-80.

Inflation-Adjusted Values Drop 64 Percent During 1980-87

The decline in farmland values from 1980 to 1987 was due to lower real returns to land, and the unequal effects of lower inflation on expected future returns and interest rates. Lower inflation slowed the likely growth of nominal returns. But nominal interest rates did not similarly fall with inflation. The result was the highest real interest rates since the Great Depression.

With falling land values, higher debt-to-asset ratios complicated the financing of farmland purchases for many potential buyers. Lower equity values with falling land prices and higher interest rates on real estate and operating loans created financial stress for many producers. Potential land investors with cash found financial assets with high interest rates to offer better returns than farmland. The forced sales of farmland contributed to the further decline in farmland prices.

Summary

U.S. farmland values through 1989 and early 1990 are expected to continue increasing at an average rate slightly above this past year's 6 percent. Higher net farm income, lower inflation-adjusted interest rates on farm real estate loans, and moderate growth in inflation underlie the forecast.

The average value of an acre of farmland climbed to \$597 during February 1988 to February 1989, the second straight increase after declines since 1982. Despite 2 years of gains, average farmland values remain 27 percent below the 1982 record. Values rose in 9 of 10 farm production regions; the Southern Plains showed a 2-percent drop. The regional increases signal a strengthening from a year ago when farmland values were higher in six regions, lower in three, and unchanged in one.

When adjusted for a near 5-percent inflation rate during the preceding 12 months, the February 1989 real value per acre rose slightly from a year earlier, the first increase in real values since 1980. Yet the current value remains 47 percent below its 1980 high.

The February 1988-89 increase in farmland values was supported by several factors. Net cash farm income reached a record high in 1988 for the second straight year. Although producers in areas hit by last summer's drought realized lower crop yields, grain producers (particularly those with irrigation and those holding stored grain) benefited from sharply higher market prices during the second half of the year. Crop receipts were the highest in 3 years. Federal drought assistance payments also helped offset lower production in drought-stricken areas. Higher cattle prices raised cash receipts from livestock to a record high. Also, the Conservation Reserve Program continued to strengthen farmland values in some areas.

Farm real estate debt fell again in 1988, down 5 percent from 1987 and 27 percent from the 1983 record. The ratios of debt to equity and to net cash income also declined, indicating that some producers had improved capacity to buy land. However, nominal interest rates on farm real estate loans averaged a half percent higher in 1988, which raised finance costs.

The Northeast registered the largest gains in regional farmland values (up 13 percent) led by Pennsylvania's 21-percent increase. Northeast values have been rising since the mid-1940's. Values in the Lake States, Corn Belt, and Northern Plains advanced rapidly in the late 1970's and then fell sharply around the mid-1980's. Even with gains of 5 percent this year and 7 percent last year, the Lake States' current value is 46 percent below the 1981 record. Similarly, Corn Belt values increased 10 percent during February 1988-89

(Iowa up 17 percent) and Northern Plains' values rose 9 percent (Nebraska up 15 percent), but current values remain 45 and 39 percent, respectively, below record highs.

Varied land uses in Appalachia and the Southeast helped lessen the declines in farmland values that occurred in most regions around the mid-1980's. Appalachia's 6-percent gain this year brought the region's average to only 6 percent below the 1981 record, and the Southeast's 7-percent increase raised the regional average to a record high. The 3-percent increase in the Delta States, the first since 1981, left that region's average 40 percent below 1981.

A 5-percent drop in Texas more than offset the 9-percent gain in Oklahoma, leading to an overall 2-percent decline for the Southern Plains. Higher values in the Pacific region (5 percent) and the Mountain region (1 percent) signaled the first increases since 1984. Current values in all three regions remain around 30 percent below their peaks.

Cash rents for cropland in 1989 tended to be higher in most States, especially in the Corn Belt and Delta States. The ratio of cash rents to land values was unchanged or slightly lower for most States, except those in the West, where rents increased proportionately more than cropland values. Cash rents for pasture were near 1988 levels for most States. Record cattle prices helped maintain and increase pasture rents.

Voluntary and estate sales accounted for two-thirds of reported farmland transfers in 1989, while foreclosures, bankruptcies, and condemnation sales jointly comprised 15 percent (21 percent in 1988). Farm owner/operators were involved in 57 percent of all farmland purchases, accounting for 57 percent of the acreage sold and 54 percent of the total value of sales. Nonfarmers participated in 29 percent of the sales, representing 32 percent of the acreage sold and 37 percent of total value of sales.

About 87 percent of the farmland sold was expected to remain in agricultural uses 5 years after purchase, 2 percent in forestry, and 11 percent in other uses. Agricultural uses accounted for at least 90 percent of all expected uses in the Lake States, Corn Belt, Northern Plains, Mountain, and Pacific regions. Other uses, principally recreation, housing, and commercial/industrial operations, were expected to be highest in the Northeast (28 percent) and the Southeast (20 percent).

About two-thirds of the sales involved credit financing, down substantially from 90 percent in the early 1980's when farmland prices were their highest. Debt to purchase price averaged 73 percent in 1989, about the same as a year ear-

lier, but down from 78 percent in the early 1980's. Commercial banks provided 34 percent of the credit for reported sales, up from 32 percent a year earlier, and 4 percent in the early 1980's. Other principal suppliers included seller financing (24 percent) and the Farm Credit System (29 percent).

Foreign ownership of U.S. agricultural land increased 99,000 acres in 1988, raising the total to 12.5 million acres as of December 31, 1988. Less than 1 percent of all privately owned U.S. agricultural land and about 0.5 percent of all U.S. land are foreign owned.

Taxes on U.S. farm real estate totaled just over \$4.3 billion in 1987, the most recent year for which information is available. Taxes in 1987 were 8 percent above a year earlier and 16 percent above 1982. The 1987 tax averaged \$4.97 per acre (\$4.60 in 1986) and the tax per \$100 of full-market value averaged \$0.86 in 1987, up from \$0.73 in 1986.

Outlook

The average value of U.S. farmland is expected to continue rising during February 1989-90 at a rate slightly above this past year's 6-percent. This outlook was developed from a national model for forecasting U.S. farmland values. Higher net farm income, lower real (inflation-adjusted) interest rates on farm real estate loans, and moderate growth in inflation underpin the forecast.

Net cash income in 1989 is forecast to be down from the 1988 record, primarily because of lower Government payments, higher production expenses, and some rebuilding of grain inventories drawn down in 1988. However, net farm income, which includes changes in the value of commodity inventories, may exceed the 1987 record. State and regional shares of national farm income will depend on production decisions and 1989 growing conditions within the areas. Last year's drought is not expected to be repeated. Yet dry conditions and winterkill have reduced the winter wheat crop in Kansas, the Southern Plains, and much of the Mountain region. California is also experiencing drought conditions. Some producers who sold stored grain in 1988 will have less to fall back on this year if their production is down again.

Interest and inflation rates are expected to be moderately higher in 1989. Higher interest rates will increase finance costs for purchasing farmland and for operating expenses. Because farmland is often considered a hedge against inflation, higher inflation rates may help push farmland values up. Returns to farm equity are currently forecast at between 4 and 5 percent, up from last year's 2.9 percent. The 4.4 percent in 1987 has been the highest in the 1980's.

Farm real estate debt is expected to be slightly higher in 1989, the first increase since 1983. Higher asset values in 1989 may offset the increase in debt so that the ratio of debt to equity may be unchanged from last year's. The ratio of debt to equity declined during 1985-88.

The Conservation Reserve Program (CRP) continues to strengthen values of below average cropland in some areas. Additional signups are planned for July 1989 and for 1990 with the goal of expanding the current enrollment of 30.6 million acres to 40-45 million by the end of 1990.

Recent surveys point to expected higher farmland values. In a May 1 national survey of rural appraisers, about 68 percent expected farmland values to be higher during May 1989 to May 1990, while about one-fourth expected unchanged values, and only 6 percent expected lower values. Overall, appraisers anticipated values to increase about 3.5 percent during May 1989-90, a rate lower than that developed from the national forecasting model. Appraisers will be resurveyed on August 1 for their opinions on expected changes in farmland values. Higher 1989 first quarter farmland values were also reported for the Federal Reserve Districts of Chicago, Minneapolis, and Kansas City. Values continued lower in the Dallas District.

Because investors typically consider a multiyear period when buying farmland, they must try to anticipate changes in farm programs, which expire in 1990, as well as outcomes of current trade negotiations. Improvement in the export market for U.S. agricultural commodities offers the most likely source of significant increases in commodity prices and returns to land.

Value of U.S. Farmland 6 Percent Higher

U.S. farmland values averaged \$597 per acre as of February 1989 (table 1). The 6-percent national increase from February 1988 to February 1989 represented the second consecutive gain after 5 years of declining values following the record \$823 per acre in 1982. Even with recent increases, the 1989 value remains 27 percent below the 1982 high.

After adjusting the 6-percent nominal increase in value for inflation, which averaged about 5 percent in 1988, the real (inflation-adjusted) value of U.S. farmland in 1989 rose 1 percent, but continued nearly 47 percent below the 1980 high.

Farmland values primarily reflect investors' expected returns to land and interest rates on real estate loans. Past movements in returns, interest and inflation rates, and farmland values help form these expectations. Changes in these factors usually have a lagged effect on farmland values.

Several factors contributed to the increase in values. Net cash income to farmers and ranchers in 1988 surpassed last year's record high. Rising prices helped boost crop receipts to their highest in 3 years. Higher cattle prices helped expand cash receipts from livestock to record highs in 1988.

Although producers—except those with irrigation—experienced lower crop yields because of the drought in 1988, grain producers benefited from sharply higher market prices during the second half of the year, especially those selling stocks from earlier years. Federal drought assistance payments provided some relief to blunt the short-term impact of

the drought. Also, the Conservation Reserve Program continued to strengthen farmland values in some areas.

Farm real estate debt continued to fall in 1988, down 5 percent from 1987 and 27 percent from the 1983 record. The ratios of debt to equity and to net cash income declined again in 1988, indicating a stronger financial capacity of some producers to buy land. Yet nominal interest rates on farm real estate loans averaged a half percent higher in 1988. Because most of the increase occurred in the last 6 months, its impact on current land values may not yet be fully realized. Although real (inflation-adjusted) interest rates were lower in 1987 and 1988, they continue to be well above rates in the 1970's.

The February 1989 value of farmland and buildings for the 48 States totaled \$594 billion, 6 percent above a year earlier (table 2). Because the acreage in farms and ranches does not change much from year to year, the percent changes in total value closely parallel changes in per acre values of farmland.

Farm buildings accounted for 13 percent of the total value of farmland and buildings in 1989 (app. table 1). Building values as a proportion of total value ranged from 8 to 12 percent for most regions. Percentages were notably higher in the Lake States (19 percent), Appalachia (20 percent), and the Northeast (26 percent).

The per farm value of farmland and buildings in the 48 contiguous States averaged nearly \$276,000 in 1989, 6 percent

Figure 1
**Average Real and Nominal Values
of U.S. Farmland**

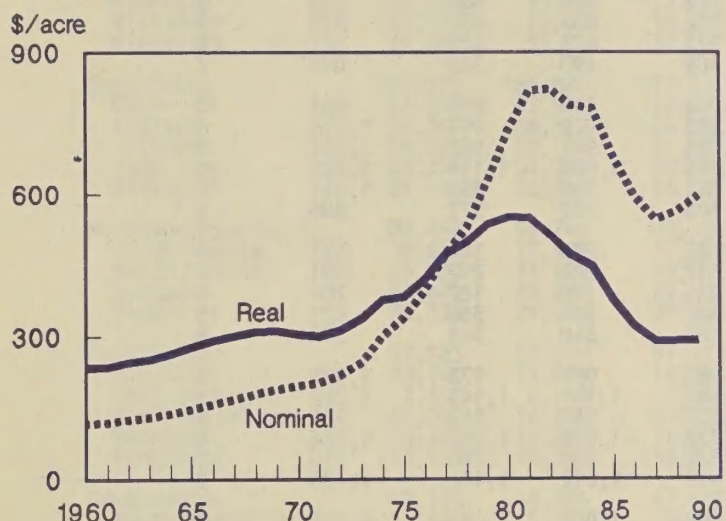


Figure 2
Change in Per Acre Nominal Values of U.S. Farmland

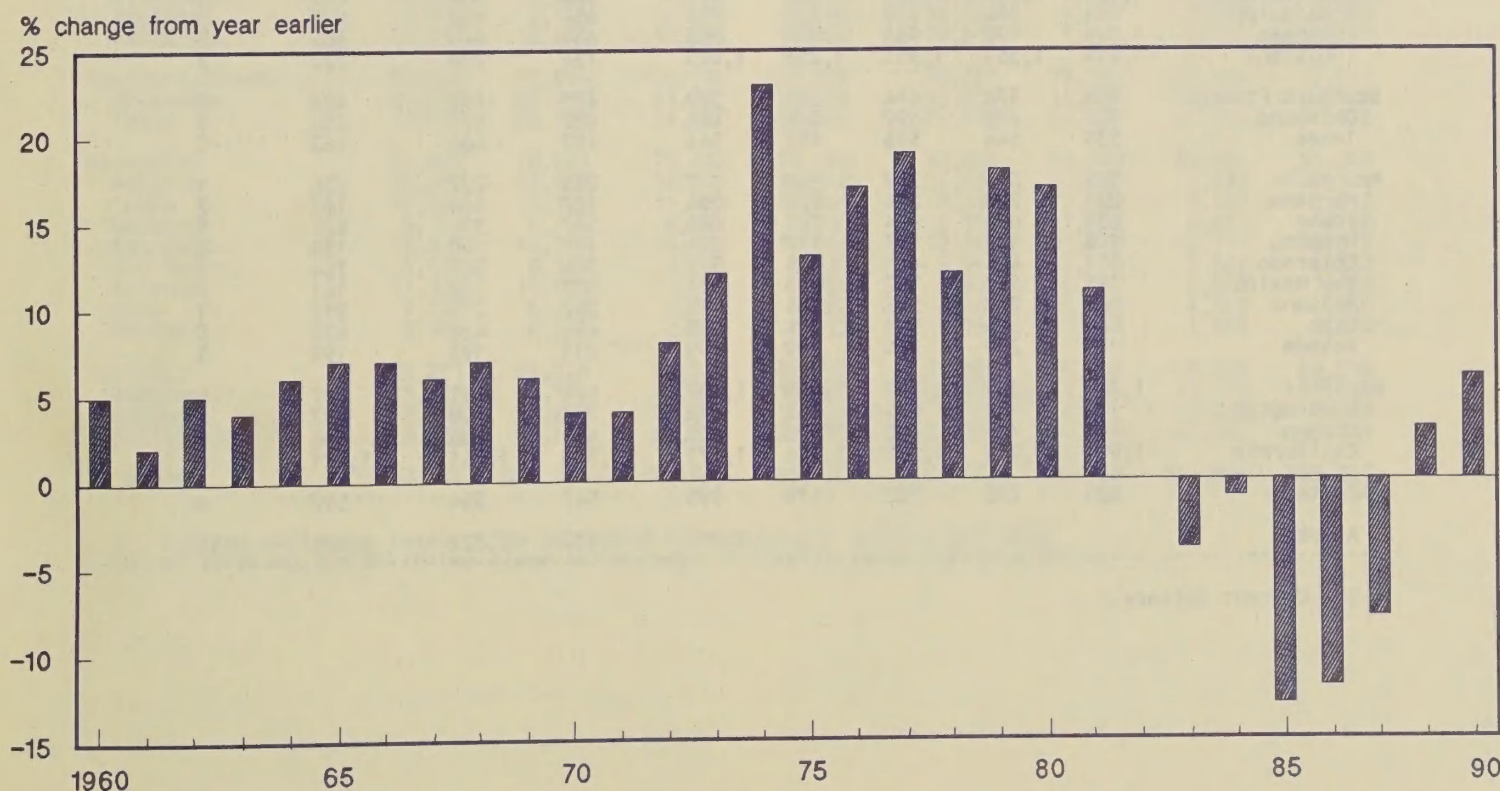


Table 1--Average per acre value of farmland and buildings, by State, 1982-89 1/

State	As of April 1				As of February 1				Change
	1982	1983	1984	1985	1986	1987	1988	1989	1988-89
	Dollars								Percent
Northeast:	1,364	1,343	1,414	1,392	1,416	1,607	1,747	1,979	13
Maine	680	708	750	856	993	1,082	1,236	1,323	7
New Hampshire	1,136	1,174	1,244	1,419	1,646	1,794	2,037	2,180	7
Vermont	815	842	893	1,017	1,180	1,286	1,345	1,439	7
Massachusetts	1,874	1,963	2,081	2,372	2,752	2,999	3,534	3,782	7
Rhode Island	2,729	2,760	2,926	3,335	3,869	4,217	6,240	6,676	7
Connecticut	2,610	2,655	2,814	3,208	3,721	4,056	4,914	5,258	7
New York	821	817	842	808	824	931	956	1,014	6
New Jersey	3,181	3,140	3,234	3,525	3,913	5,321	6,189	7,241	17
Pennsylvania	1,513	1,520	1,642	1,510	1,450	1,725	1,819	2,201	21
Delaware	1,787	1,829	1,866	1,642	1,757	1,775	1,895	2,217	17
Maryland	2,376	2,121	2,185	2,097	1,887	1,831	2,014	2,216	10
Lake States:	1,234	1,160	1,099	874	702	598	639	673	5
Michigan	1,278	1,223	1,223	1,052	936	833	853	879	3
Wisconsin	1,144	1,113	1,046	847	711	626	630	661	5
Minnesota	1,272	1,165	1,083	823	609	493	563	602	7
Corn Belt:	1,642	1,482	1,414	1,055	903	815	888	981	10
Ohio	1,629	1,504	1,444	1,126	1,013	942	991	1,051	6
Indiana	1,804	1,610	1,594	1,259	1,058	931	983	1,061	8
Illinois	2,023	1,837	1,800	1,314	1,143	1,040	1,114	1,225	10
Iowa	1,889	1,684	1,499	1,064	841	748	890	1,041	17
Missouri	945	856	856	659	606	552	572	606	6
Northern Plains:	547	528	499	383	323	286	306	333	9
North Dakota	455	439	439	360	317	282	292	301	3
South Dakota	349	348	338	250	215	178	187	204	9
Nebraska	730	701	617	444	364	335	366	421	15
Kansas	628	601	583	466	387	340	368	390	6
Appalachia:	1,083	1,082	1,090	1,005	983	951	972	1,028	6
Virginia	1,096	1,125	1,114	1,091	1,146	1,111	1,143	1,292	13
West Virginia	723	688	667	554	537	527	542	569	5
North Carolina	1,297	1,314	1,380	1,242	1,130	1,096	1,062	1,126	6
Kentucky	1,058	1,049	1,007	906	870	791	786	810	3
Tennessee	1,040	1,014	1,044	982	992	1,012	1,104	1,126	2
Southeast:	1,095	1,095	1,094	1,042	999	1,000	1,056	1,127	7
South Carolina	980	946	927	899	872	794	874	953	9
Georgia	926	929	910	865	822	846	865	943	9
Florida	1,518	1,576	1,608	1,527	1,435	1,464	1,596	1,692	6
Alabama	885	826	809	769	761	731	731	760	4
Delta States:	1,135	1,039	1,040	946	797	666	665	683	3
Mississippi	981	894	939	835	752	654	658	678	3
Arkansas	1,096	972	933	849	705	634	645	664	3
Louisiana	1,414	1,351	1,351	1,256	1,005	734	708	722	2
Southern Plains:	576	574	614	635	529	471	457	446	-2
Oklahoma	725	699	699	566	481	428	421	459	9
Texas	539	544	593	652	541	482	466	443	-5
Mountain:	325	314	319	286	247	233	227	230	1
Montana	271	259	264	222	204	167	164	167	2
Idaho	839	814	814	749	644	567	592	621	5
Wyoming	193	193	197	177	154	151	140	136	-3
Colorado	451	454	468	435	357	364	364	364	0
New Mexico	195	178	182	163	134	122	132	141	7
Arizona	302	289	295	265	231	242	214	212	-1
Utah	589	560	571	514	478	454	428	428	0
Nevada	268	249	254	229	199	211	193	199	3
Pacific:	1,346	1,357	1,361	1,225	1,107	974	951	997	5
Washington	922	933	961	923	812	723	699	727	4
Oregon	705	705	698	579	521	479	466	466	0
California	1,900	1,918	1,918	1,726	1,571	1,366	1,341	1,421	6
48 States	823	788	782	679	595	547	564	597	6
Alaska					1,902	1,437	1,322	1,071	-19

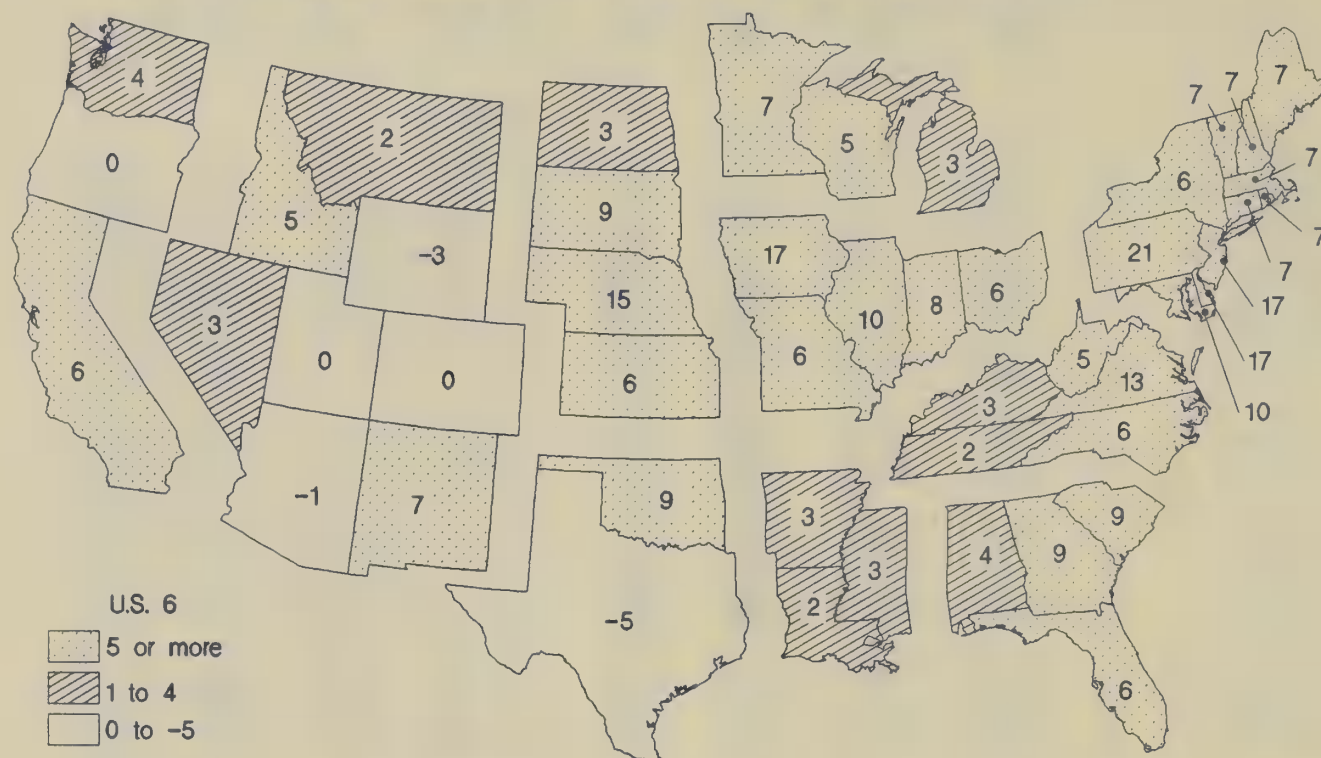
1/ Current dollars.

Table 2--Total value of farmland and buildings, by State, 1982-89 1/

State	As of April 1				As of February 1			
	1982	1983	1984	1985	1986	1987	1988	1989
Million dollars								
Northeast:	37,922	37,061	38,805	37,414	36,937	41,548	44,448	50,384
Maine	1,074	1,104	1,170	1,301	1,509	1,645	1,854	1,984
New Hampshire	613	634	678	766	856	933	1,059	1,133
Vermont	1,385	1,431	1,517	1,627	1,888	2,057	2,125	2,273
Massachusetts	1,293	1,315	1,415	1,613	1,871	2,039	2,403	2,571
Rhode Island	205	207	214	243	282	308	449	481
Connecticut	1,279	1,328	1,351	1,540	1,675	1,785	2,162	2,313
New York	7,800	7,762	7,910	7,353	7,170	8,009	8,127	8,615
New Jersey	3,245	3,140	3,137	3,314	3,521	4,523	5,137	6,010
Pennsylvania	13,314	13,224	14,282	13,137	12,322	14,663	15,280	18,488
Delaware	1,179	1,189	1,231	1,067	1,124	1,100	1,118	1,308
Maryland	6,534	5,727	5,899	5,452	4,718	4,485	4,733	5,206
Lake States:	74,402	69,615	65,711	52,004	41,373	35,235	37,529	39,553
Michigan	14,569	13,942	13,942	11,993	10,580	9,416	9,554	9,841
Wisconsin	21,164	20,257	18,832	14,992	12,522	11,019	11,087	11,641
Minnesota	38,669	35,416	32,937	25,019	18,271	14,799	16,889	18,071
Corn Belt:	207,575	186,820	177,514	132,198	113,021	101,475	110,617	122,129
Ohio	26,064	23,914	22,813	17,791	16,012	14,702	15,461	16,389
Indiana	30,307	26,726	26,140	20,648	17,344	15,077	16,114	17,404
Illinois	58,060	52,722	51,667	37,712	32,809	29,752	31,850	35,035
Iowa	63,659	56,751	50,358	35,750	28,243	25,061	29,803	34,869
Missouri	29,484	26,707	26,536	20,297	18,613	16,842	17,389	18,432
Northern Plains:	99,193	95,741	90,120	69,174	58,173	51,431	54,955	59,698
North Dakota	18,655	17,999	17,999	14,724	12,894	11,419	11,817	12,171
South Dakota	15,530	15,486	15,021	11,125	9,568	7,905	8,258	9,001
Nebraska	34,675	33,227	29,117	20,957	17,185	15,810	17,244	19,830
Kansas	30,332	29,028	27,983	22,368	18,526	16,304	17,637	18,695
Appalachia:	57,523	57,029	57,113	52,177	50,697	48,679	49,613	52,431
Virginia	10,740	11,025	10,803	10,474	10,997	10,667	10,972	12,399
West Virginia	3,108	2,752	2,536	1,994	1,988	1,949	1,950	2,048
North Carolina	14,397	14,454	15,177	13,414	12,206	11,840	11,152	11,821
Kentucky	15,341	15,211	14,602	13,137	12,612	11,476	11,403	11,745
Tennessee	13,936	13,588	13,995	13,159	12,894	12,747	14,135	14,418
Southeast:	49,173	48,284	47,689	45,316	42,673	42,202	44,666	47,662
South Carolina	5,880	5,487	5,192	4,945	4,709	4,126	4,634	5,051
Georgia	12,964	12,727	12,291	11,678	10,929	11,003	11,241	12,253
Florida	19,886	20,488	20,898	19,851	18,660	19,033	20,750	21,995
Alabama	10,443	9,582	9,309	8,844	8,374	8,039	8,042	8,364
Delta States:	46,402	42,176	41,998	38,043	31,632	25,904	25,280	25,971
Mississippi	14,224	12,784	13,330	11,774	10,521	9,023	8,883	9,149
Arkansas	17,755	15,746	15,023	13,584	11,063	9,767	9,673	9,963
Louisiana	14,423	13,645	13,645	12,686	10,048	7,115	6,724	6,858
Southern Plains:	98,238	97,944	104,184	107,024	88,392	78,283	75,446	73,619
Oklahoma	24,288	23,417	23,067	18,678	15,876	14,130	13,893	15,143
Texas	73,951	74,528	81,117	88,346	72,515	64,153	61,554	58,476
Mountain:	81,605	78,521	79,482	70,776	60,883	56,999	55,461	56,306
Montana	16,666	15,877	16,141	13,542	12,438	10,183	9,932	10,131
Idaho	12,501	12,129	11,966	10,861	9,147	7,822	8,107	8,512
Wyoming	6,755	6,755	6,851	6,160	5,359	5,252	4,877	4,730
Colorado	15,875	15,799	16,180	14,964	12,199	12,370	12,277	12,277
New Mexico	8,970	8,188	8,315	7,335	5,961	5,425	5,922	6,337
Arizona	11,325	10,838	11,054	9,938	8,576	8,957	7,808	7,730
Utah	7,127	6,720	6,740	5,962	5,449	5,132	4,840	4,840
Nevada	2,385	2,216	2,235	2,015	1,753	1,858	1,698	1,749
Pacific:	91,271	91,576	91,329	82,068	73,852	64,704	63,033	66,094
Washington	15,121	15,208	15,472	14,860	12,996	11,566	11,178	11,625
Oregon	12,690	12,690	12,563	10,422	9,328	8,581	8,288	8,288
California	63,460	63,678	63,294	56,785	51,529	44,557	43,567	46,181
48 States	843,104	804,765	793,946	686,194	597,632	546,468	561,048	593,845

1/ Current dollars. Total value estimated by multiplying average per acre value of farmland and buildings times the acreage of land in farms for each State.

Figure 3
Percent Change In Farmland Value Per Acre, February 1988-89



above a year ago (app. table 2). The average size of operation was 463 acres.

The Mountain region recorded the highest average of farmland and buildings (\$472,800) primarily because of the large size of many farms and ranches which include large tracts of grazing land. The average size of operation was 2,050 acres, but because of the prevalence of relatively low-valued grazing land, the per acre value of \$230 was lowest among all regions. State averages ranged from nearly \$364,000 per farm in Utah (850 acres per operation) to \$954,300 in Arizona (4,500 acres per operation).

A combination of average-size (435 acres), but relatively high-valued (\$997 per acre) operations led to an average per farm value of \$433,400 in the Pacific region, second highest in the country.

Values per farm were also high in the Northeast, but largely because of high per acre values. The average value of farms was \$333,300, but the average farm size was only 168 acres. Farm size in New Jersey, for example, averaged only 112 acres, but its value of \$7,241 per acre brought the State's average value per farm to \$812,150, second highest in the country.

Appalachia's \$157,700 per farm was the lowest among all regions because of the small (153 acres) average size of operations. The region's average value of \$1,028 was third highest among the 10 regions.

Northeast and Corn Belt Continue To Lead Regional Increases

The Northeast's 13-percent increase and the Corn Belt's 10-percent expansion in farmland values during February 1988-89 led all regional increases, as they did a year ago. Most other regions realized increases of 5-9 percent, except the Delta States (up 3 percent), Mountain States (up 1 percent), and the Southern Plains (down 2 percent). The widespread increases in regional values contrast with a year earlier when six regions showed increases, one had no change (Delta States), and three reported lower values (Southern Plains, Mountain, and Pacific).

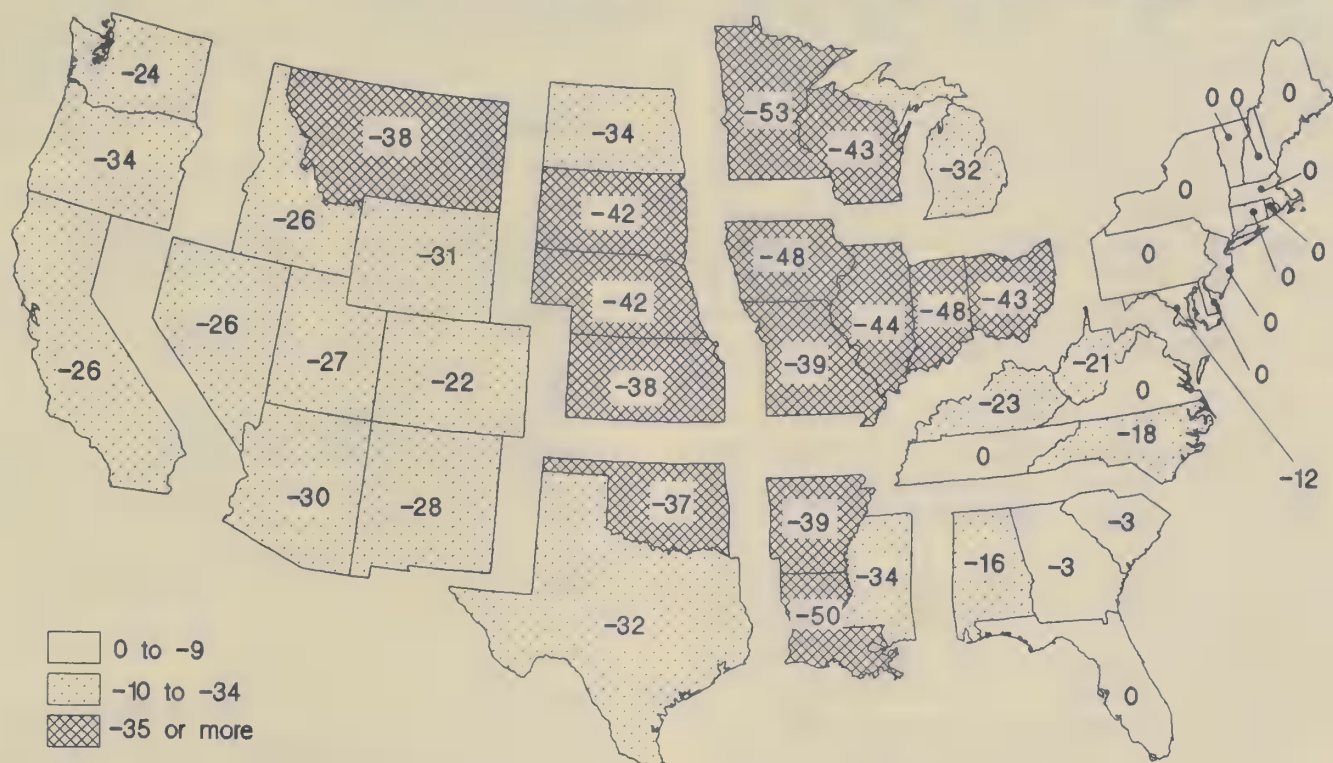
In the following regional highlights, 1988 farm incomes are preliminary.

Northeast

Farmland values continued upward in 1989 as they have since the mid-1940's. The demand for land, including farmland, for urban development, second homes, and other nonagricultural uses affects farmland values throughout the region, especially in the New England States. Farmers' net cash income in 1988 was lower in all States, except Delaware and New Hampshire.

The 17-percent expansion in New Jersey's farmland values brought the State's per acre value to \$7,241 in 1989, the highest among the 48 States. Strongest value increases

Figure 4



occurred in the northeast areas, which are the State's most urbanized.

New York, Pennsylvania, Delaware, and Maryland also have highly urbanized areas, but agriculture remains relatively more important than in other States in the region. All these States experienced lower values around the mid-1980's. By 1989, however, all except Maryland had recovered to record levels. Maryland's 1989 value of \$2,216 remains nearly 12 percent below the record \$2,530 in 1981. Pennsylvania's 21-percent increase in farmland values was the largest of all States. Values were generally higher throughout the State, but especially in the southeast portion which includes Philadelphia.

Lake States

Even with the region's 13-percent increase in farmland values over the past 2 years, the \$673 per acre in 1989 remains 46 percent below the 1981 record. Regional values rose rapidly in the 1970's, tripling during 1974-81, but then fell 50 percent during 1981-87.

The 1988 drought reduced yields of major crops, but with higher market prices and sales of stored grain, cash receipts increased in all States. The higher receipts, however, were offset by higher expenses leading to slightly lower net cash income in Michigan and Wisconsin. Minnesota farmers realized higher incomes.

Strongest value increases were in the southern portions of each of the States, where agriculture is most important and

the urban centers are located. Increased CRP enrollment in Minnesota may also help account for the State's 7-percent growth in farmland values this past year. To date, Minnesota's enrollment represents nearly 6 percent of all CRP acreage.

Corn Belt

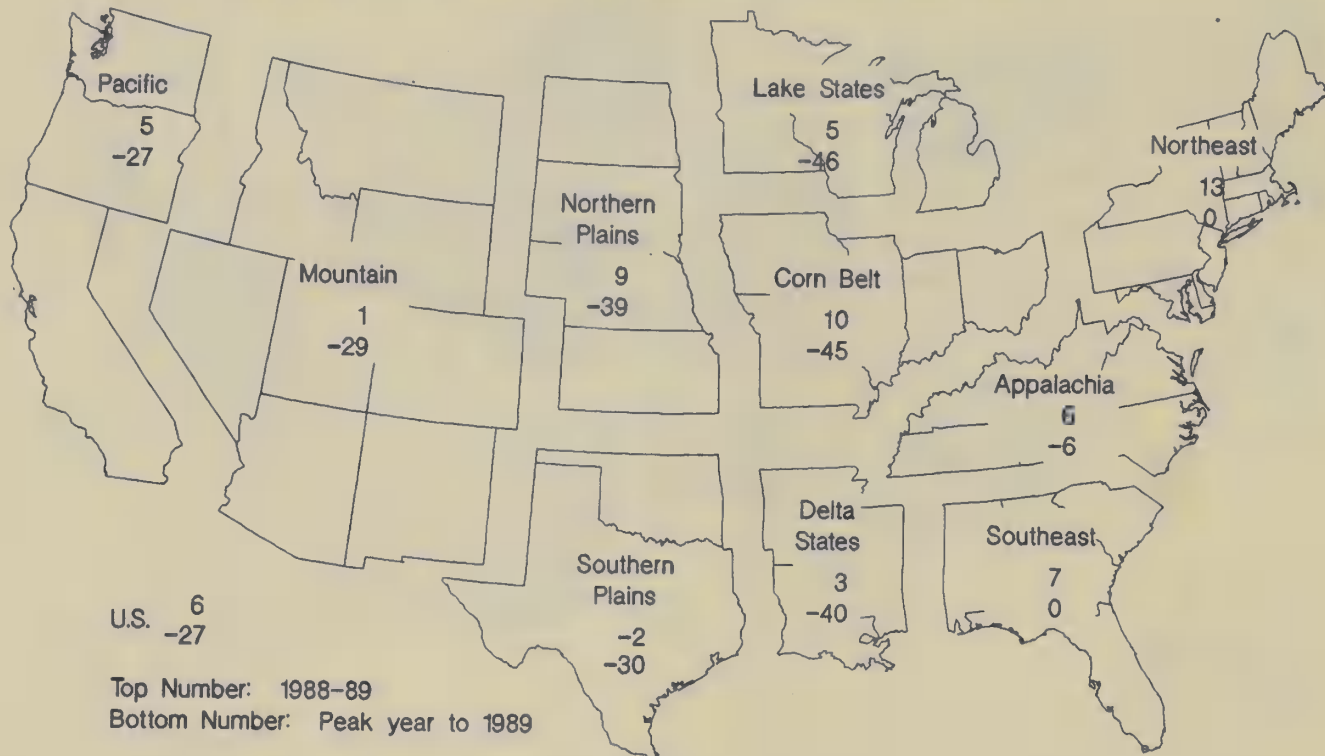
Movements in Corn Belt farmland values generally track those of the Lake States. Even with a 20-percent increase during the past 2 years, the 1989 regional value of \$981 per acre is still 45 percent below the 1981 high.

Most of the region suffered from the 1988 drought. Compared with a year earlier, corn yields were off nearly one-third or more (35 percent in Iowa and 45 percent in Illinois) and soybean yields were down about 30 percent (19 percent in Missouri). Crop and livestock receipts in 1989 were higher in all States, partly due to sales of carryover grain stocks. Regionwide corn inventories, as of December 1, 1988, were about 30 percent below a year earlier; soybean stocks were down nearly 25 percent. Despite higher cash receipts, 1988 net cash incomes were down for all States, except Missouri, which appeared least affected by the drought.

Iowa's 17-percent increase in farmland values during February 1988-89 led the region and follows a 19-percent increase a year earlier. The relatively large increases may partly represent a market correction of the large value declines—compared with those in surrounding States—during 1982-87.

Figure 6

Percent Change in Farmland Value Per Acre, February 1988-89 and Peak Year to February 1989, by Farm Production Regions



The Corn Belt has 14 percent of all CRP acres, with the largest enrollments in Iowa and Missouri.

Northern Plains

Farmland values continue to recover from the sharp drops during 1983-87. The current regional value—\$333 per acre—is nearly 40 percent below the 1982 high. February 1988-89 increases ranged from 3 percent in North Dakota to 15 percent in Nebraska. North Dakota was hit by the drought, while Nebraska producers largely escaped it. Net cash incomes were higher in all States in 1988, particularly North Dakota.

North Dakota's principal crop is spring wheat for which 1988 yields were about half of a year earlier. Yields for other crops were sharply lower too. Yet cash receipts from crops were substantially higher as grain inventories from earlier years were drawn down and sold. Wheat stocks on December 1, 1988, were 35 percent below a year earlier and nearly 45 percent below December 1986. Livestock receipts were higher too as herds were reduced because of poor grazing. North Dakota's CRP enrollment is second largest among all States, currently accounting for just over 8 percent of the national total.

Although wheat and soybean yields in Nebraska were off around 15-20 percent during 1987-88, yields for corn, Nebraska's principal crop, were close to preceding years. Corn yields held up because much of the acreage is irrigated.

Strongest farmland value increases occurred in irrigated areas of the State.

Just over one-fourth of all CRP acreage is in the Northern Plains. Largest enrollments are in Kansas and North Dakota.

Appalachia

Higher farm incomes in 1988 helped raise the regional farmland value 6 percent during February 1988-89. While agriculture continues to be important, land uses are more varied than, for example, in the Corn Belt, Northern Plains, and other predominantly agricultural regions. Values increased sharply in the late 1970's, but after peaking in 1981, declined only moderately compared with most other regions. Demand for land for rural industry and recreational uses and for commuter, retirement, and vacation homes helped support land values throughout the 1980's. The 1989 value is only 6 percent below the 1981 high.

Virginia's 13-percent increase led the regional expansion. Largest increases were in the northern portions of the State where demand for urban uses is strong. After several years of lower values, Kentucky and North Carolina showed 3- and 6-percent increases, respectively. Higher crop yields in both States, except corn in Kentucky, helped boost farm incomes to record highs in 1988. Strongest increases in farmland values within the States occurred in the central portion of North Carolina and in northern Kentucky. Both areas include urban centers.

Southeast

Land uses are also varied in the Southeast. Value increases over the past 2 years have brought the regional average back to the 1981 record. State increases ranged from 4 percent in Alabama (the first since 1981) to 9 percent in Georgia and South Carolina.

Farm incomes were higher in all States and substantially higher in Alabama and Georgia. Farmland values were higher in most of Alabama and especially higher in the wheat-soybean producing areas. Both wheat and soybean yields were substantially higher in 1988.

South Carolina's 9-percent gain followed a 10-percent increase a year ago. Woodland values were substantially higher in 1989. Woodland accounts for 25-30 percent of all land in farms. Farmland values were also higher in the tobacco and wheat-soybeans areas, which also include several metropolitan centers.

Delta States

The region's 3-percent increase in 1989 was the first since 1981. Higher yields of major crops in the past 2 years and stronger market prices led to sharply higher crop receipts in 1988. This, together with expanded livestock receipts, led to substantially higher net cash incomes in 1988.

Increases in State values ranged from 2 to 3 percent over a year earlier. The more moderate 2-percent gain in Louisiana likely reflects ongoing economic adjustments following the 1986 drop in energy prices. Farmland values in all three States were relatively higher in the wheat-soybeans, rice, and cotton areas. Most of these crops are grown in the Delta Plain.

Southern Plains

The 5-percent drop in Texas farmland values more than offset a 9-percent gain in Oklahoma, leading to a 2-percent decline for the region. Although values have been declining since 1985 and are still 30 percent below the 1985 record, the rate of decline has slowed.

Farm income was sharply higher in Oklahoma, where wheat producers realized record yields. Receipts from livestock were also higher. The largest farmland value increases occurred in the principal wheat-producing areas.

Values continued lower in Texas, largely due to lower values for grazing land, which accounts for about two-thirds of the State's land in farms and ranches. The Texas economy continues to adjust to the 1986 drop in energy prices which, in turn, appears to have dampened the demand for land, including farm and ranch land, for nonagricultural uses.

Mountain

Much of the northern portion of the region experienced drought in 1988. Winter wheat yields were lower, particularly in Montana (down 47 percent) and Colorado (down 12 percent). Spring wheat and durum yields were also sharply lower in Montana. However, cash receipts from crops were higher in 1988, due to higher prices and a drawdown of stocks. December 1988 wheat stocks in the region were close to 40 percent below a year earlier (47 percent lower in Montana). Higher gross receipts from crops and livestock were more than offset by increased expenses, which lowered net cash incomes in most States except Idaho and Montana.

The 1-percent regional increase during February 1988-89 was the first since 1984. Value changes ranged from a 3-percent decline in Wyoming to a 7-percent gain in New Mexico. Farmland values are closely linked to the value of grazing land, which comprises more than two-thirds of all land in farms and ranches in most States. Wyoming's 3-percent drop in farmland values resulted from lower values for grazing land, which accounts for about 91 percent of all land in farms and ranches. In contrast, higher grazing land values in New Mexico, where over 95 percent of the agricultural land is in grazing, contributed to the State's 7-percent increase in farmland values.

Twenty percent of all CRP acreage is in the Mountain region. CRP acreage is concentrated in Montana (2.5 million), Colorado (1.8 million), and Idaho (0.7 million).

Pacific

Land uses are varied in this region, as in the East Coast regions. This year's 5-percent increase was the first since 1984. State values ranged from no change in Oregon to a 6-percent gain in California. Net cash incomes were higher in California and Washington, but lower in Oregon.

Higher farmland values in the wheat and specialty crop areas of Oregon were offset by lower values in areas predominantly in pasture. Pasture accounts for about two-thirds of all land in farms.

Dry and irrigated cropland and woodland values were higher in California in 1989. Pasture values were down from a year earlier. Strongest increases in farmland values were reported for the coastal area, which includes the urban centers, and the southern portion of the State.

Recent Updates In Farmland Values

In a May 1989 survey, a national panel of close to 500 accredited rural appraisers provided information on recent changes in farmland values within their specified areas and opinions on expected changes in values. Area responses were then weighted to form regional and national estimates.

Figure 6

Regions in National Survey of Rural Appraisers



only 1 percent specified lower values (table 3). Higher values were reported most frequently in the North Central region, while the majority of appraisers in other regions felt values were stable. The 2.2-percent increase at the national level was led by a reported 3.6-percent gain in the North Central region, where appraisers reported better commodity prices as the principal factor behind the increase.

Appraisers see ■ moderating in U.S. value increases to around 0.6 percent during May through July 1989. About 75 percent of the appraisers expect stable values and only 24 percent anticipate increases. Most optimism for higher values is in the North Central region and the West.

Looking ahead 12 months to May 1990, appraisers expected U.S. farmland values to rise about 3.4 percent, with regional increases ranging from 2.4 percent in the South and Northeast to 4.5 percent in the North Central region. About 68 percent of all appraisers expected higher values during May 1989-90, while 26 and 6 percent anticipated stable and lower values, respectively.

The 3.4-percent increase forecast for May 1989-90 represents ■ slowing from the 4.0 percent reported for November

Consequently, appraisers' expectations of farmland values were developed differently from the Economic Research Service forecast given earlier in the Outlook section.

At the national level, nearly 47 percent of the appraisers in the May 1 survey reported higher values during the preceding 3 months, about 52 percent indicated no change, and

Table 3.--Changes in farmland values, as reported by accredited rural appraisers, as of May 1, 1989, and November 1, 1988

	May 1, 1989 Survey											
	Share reporting values during Feb. through Apr. were:				Share expecting values during May through July to be:				Share expecting values during May 1989 through May 1990 to be:			
	Change in value				Change in value				Change in value			
	Higher	Same	Lower	value	Higher	Same	Lower	value	Higher	Same	Lower	value
Percent												
Northeast	12	53	0	0.4	6	94	0	0.1	47	53	0	2.4
No. Central	67	33	■	3.6	26	73	1	1.0	70	26	4	4.5
South	26	73	1	1.4	17	52	1	0.3	61	33	6	2.4
West	46	53	1	1.4	30	69	1	0.5	74	18	■	3.3
U.S.	47	52	1	2.2	24	75	1	0.6	68	26	6	3.4

	November 1, 1988											
	Share reporting values during Aug. through Oct. were:				Share expecting values during Nov. 1988 through Jan. 1989 to be:				Share expecting values during Nov. 1988 through Nov. 1989 to be:			
	Change in value				Change in value				Change in value			
	Higher	Same	Lower	value	Higher	Same	Lower	value	Higher	Same	Lower	value
Northeast	74	25	1	1.8	80	20	0	1.5	100	0	0	5.2
No. Central	53	43	4	2.8	50	48	2	1.7	72	23	5	5.2
South	37	61	2	1.0	41	45	14	0.2	67	21	12	2.9
West	26	64	10	0.6	42	52	6	0.7	70	25	5	3.4
U.S.	40	55	5	1.6	46	48	6	0.9	71	22	7	4.0

■ = Less than 0.5 percent.

1988-89, as reported from the November 1, 1988, survey (table 3). Increases expected for November 1988-89 were higher in all regions, particularly the Northeast and North Central, than those anticipated for May 1989-90.

A survey of agricultural bankers in the Federal Reserve Bank of Chicago District (Iowa, northern portions of Illinois and Indiana, southern Wisconsin, and Michigan) indicated that the value of "good" farmland increased 3 percent during January-March 1989, the same as in the preceding 3 months. District values have increased for 8 consecutive quarters. State increases during first-quarter 1989 ranged from 2 percent in Iowa and Wisconsin to 5 percent in Indiana. Nearly three-fourths of the bankers surveyed expected farmland values to be stable during the second quarter, while just under one-fourth expected higher values, and 3 percent lower values. Strong demand for farm loans is pushing interest rates higher.

Rural bankers in the Federal Reserve Bank of Minneapolis also reported higher values in their region during first-quarter 1989. The average value of nonirrigated cropland at the end of March was 7.3 percent above a year earlier, compared with a 5.7-percent gain during the 12 months ending in December 1988. The 12-month expansion of pasture or grazing land values at the end of the first quarter was 4.5 percent, substantially above the 2-percent reported in the preceding quarterly survey. Interest rates rose in the first quarter, and a majority of bankers surveyed expected higher rates in the

upcoming quarter. The Minneapolis District includes Montana, North and South Dakota, Minnesota, northern Wisconsin, and Michigan's Upper Peninsula.

The Federal Reserve Bank of Kansas City (Kansas, Nebraska, Oklahoma, Wyoming, Colorado, northern New Mexico, and western Missouri) reported a 3.9-percent increase in nonirrigated cropland values during January-March 1989. Values for irrigated cropland and ranch land were 4.9 and 3.6 percent higher, respectively. Gains in cropland values were strongest in Nebraska and Oklahoma. While cropland values were lower in Missouri, ranch land values increased about 6.5 percent.

Farmland values in the Federal Reserve Bank of Dallas District declined during the first quarter of 1989. (Values are based on a 3-quarter moving average.) The district includes Texas, southern New Mexico, and northern Louisiana. Dry and irrigated cropland values were off about 2 and 4 percent, respectively, a slightly greater rate of decline than reported for fourth-quarter 1988. Although ranch land values were down about 2.7 percent in the past quarter, the drop was less than in the preceding quarter. Higher ranch land values in New Mexico and Louisiana were more than offset by lower values in Texas. Most district bankers expected farmland values to be stable during the second quarter. Interest rates on long-term farm real estate loans were significantly higher during the first quarter, continuing increases that began in the second half of 1988.

Recent Trend of Farmland Values in the Corn Belt

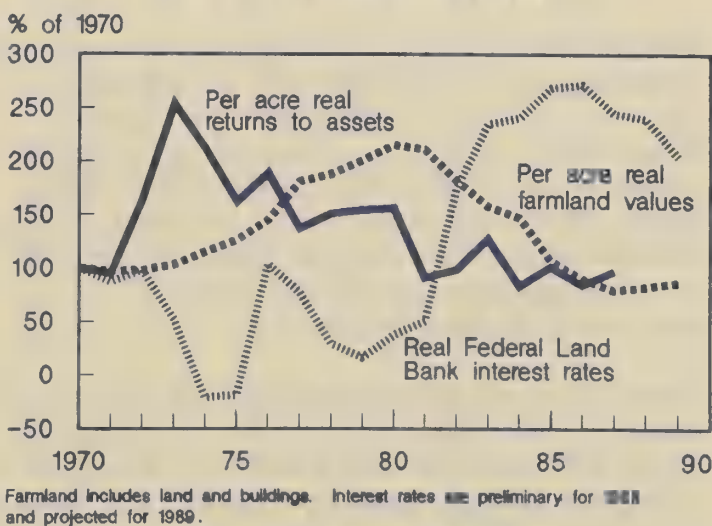
Land values in the Corn Belt, like values everywhere, are primarily based on expected returns to land. Corn Belt land values are more readily analyzed than values in other regions. First, less urban influence means farmland values are more closely related to farm activities than, for example, in the Northeast. Second, because corn and soybeans dominate the returns to land, analyses can focus on returns from only two crops.

A farmland investor usually requires that returns to land (income minus production costs, real estate taxes, and labor costs) cover the 1) cost of borrowing to finance the land purchase, and 2) interest that could be earned on the investor's equity in the land. Therefore, the basic factors affecting land values are the expected returns to land and the interest rate that reflects both the cost of borrowed capital and the foregone return on equity capital.

An analysis of farmland values in the Corn Belt shows that nearly 90 percent of the variation in regional values since

1970 is associated with changes in per acre returns to corn and soybeans and interest rates on farm real estate loans.

Corn Belt Farmland Value, Returns to Farm Assets, and Interest Rates



Past movements in returns, interest rates, and farmland values help shape these expectations. Because investors typically consider a multiyear time period when buying farmland, they also need to anticipate longer-term changes in farm programs, interest rates, technology, and export markets.

Farmland Values Rise in the 1970's

From 1971 to 1973, per acre real returns in the Corn Belt more than doubled as expanding export markets pushed commodity prices higher. At the same time, interest rates did not keep up with inflation so that real (inflation-adjusted) interest rates were lower. Farmland values, however, were only slightly higher because changes in values lag changes in economic conditions.

Real returns trended downward after 1973, and real interest rates rose from near zero in 1974-75, but still averaged below early 1970 levels. Yet farmland values soared, especially during 1975-77. Optimism sparked by the increase in returns in the early 1970's and continued low real interest rates sustained rising farmland values.

Real values peaked in 1980 as returns stabilized and real interest rates fell sharply with high inflation rates.

Recovery in 1988 and 1989

By 1987, farmland values in parts of the Corn Belt had fallen to levels that allowed a substantial return on investments.

This was especially true in Iowa, where the ratio of cash rent to value for cropland was near 10 percent, and land values had fallen below the value of land of comparable productivity in other parts of the Corn Belt. Higher rates of return and falling debt-to-asset ratios set the stage for the 1988 and 1989 increases in farmland values. Farmers and others began entering the market with many buyers paying cash for land purchases, thereby reflecting expectations that farm returns would be competitive with returns on financial assets and other investments.

Definitions

Real value per acre: Average value per acre of land and buildings for the Corn Belt region. Nominal values were adjusted by the GNP deflator. The Corn Belt includes Ohio, Indiana, Illinois, Iowa, and Missouri.

Real returns per acre: Net returns to land, including Government payments, for a composite acre of corn and soybeans. Nominal returns were adjusted by the GNP deflator and averaged for the five States.

Real interest rate: The average nominal interest rate charged by the Federal Land Bank System minus the inflation rate as measured by the GNP deflator. [Karl Gertel and Patrick Canning]

Cash Rents Higher in 1989

Nearly 46 percent of all U.S. farmland operated in 1988 was rented, according to ERS' 1988 Farm Costs and Returns Survey. (This count excludes land leased on an animal unit month basis). Leasing was most prevalent in the Corn Belt, Northern Plains, Southern Plains, and Delta States, where close to 50 percent of all land operated was leased. Leasing was least common in the Southeast, where only 26 percent of the land operated was rented. Thirty to 40 percent of the land was rented in all other regions.

Tenants leased on a cash basis most often. In 1988, about 67 percent of all rented land was rented for cash, 30 percent for shares, and 3 percent rent-free. Renting for cash was most widespread in the Lake States, Southern Plains, and Mountain regions, at slightly over 80 percent of all rented land.

Tenants cash rented least often in the Corn Belt (41 percent) and the Delta States (50 percent). Renting on a share basis was frequently used in both regions.

Cash rents are indicators of the economic returns to farmland and, therefore, are embodied in farmland values. The timing of changes in rents and farmland values usually differs. Rents may vary from year to year as market conditions and growing conditions change. Farmland values incorporate a longer time stream of past and expected returns (rents) to land. For example, cash rents for most States in the Corn Belt and Lake States regions continued upward through 1984 even though farmland values began falling around 1981. The combination of these movements led to higher rent-to-value ratios for several years as farmland values fell more rapidly than cash rents.

Landowners continue to enroll cropland in the CRP, thereby removing it from production for 10 years. Because some enrolled land was previously rented, fewer acres may be available to rent. Also, some producers placing land in the CRP and enrolling base acres in annual commodity programs may seek rental land. This increased demand and less land in the rental market would push cash rents higher.

An additional 8.8 million acres were enrolled in the CRP in 1988. Largest enrollments were in the Northern Plains (2.8 million, with high signups in Kansas and North Dakota), the Southern Plains (1.4 million, mostly in Texas), and the Mountain region (1.7 million, especially in Montana and Colorado). The 2.5 million acres enrolled in February 1989 raises total enrollment to 30.6 million.

Cash Rents for Farms

Information on cash rents for entire farms is generally limited to States east of the Plains regions. Renting entire farms is not a common practice in other States. Rents were generally higher in 1989, particularly in the Corn Belt, where they

ranged from \$47 per acre in Missouri to \$91.40 in Iowa (table 4). Rent-to-value percentages were close to 1988 levels. Farm rents in the Corn Belt were lower in 1985-87, but have partially recovered in the last 2 years.

Farm rents in Appalachia (except North Carolina) and the Southeast have been more stable over the past several years than rents in the predominantly agricultural regions. Rent-to-value percentages in Appalachia and the Southeast tend to be unchanged to lower in 1989 for most States. Rent increases for some have not kept pace with farmland value increases.

Irrigated Cropland Rents Show Strongest Increases

Substantially higher market prices coming into the 1989 production year, together with the increased certainty of production with irrigation, led to substantially higher rents in most States where irrigation is widely used (table 5). The benefits of irrigation were particularly evident in 1988 experiencing the 1988 drought. The Plains, Mountain, and Pacific regions account for most of the irrigated acreage. Highest rents were

Table 4--Farms rented for cash: Average gross cash rent per acre and rent as a percent of value, selected States, 1985-89 1/

State	Rent per acre					Rent to value				
	1985	1986	1987	1988	1989	1985	1986	1987	1988	1989
	Dollars					Percent				
Northeast:										
Maine	22.70	22.20	30.20	30.40	38.00	3.2	4.4	5.6	5.2	3.2
Vermont	34.30	*	*	30.10	28.30	6.0	*	*	2.7	3.3
New York	28.50	26.60	28.80	29.40	34.60	4.6	5.2	4.1	4.1	3.2
New Jersey	41.70	44.60	58.20	51.70	60.80	1.3	1.1	0.8	0.5	0.3
Pennsylvania	35.80	34.80	39.30	43.80	44.10	2.3	2.4	2.5	2.5	2.1
Delaware	63.30	64.00	59.50	55.20	52.30	3.6	3.6	3.1	2.9	2.1
Maryland	57.50	52.50	49.00	58.50	53.60	2.4	3.2	2.5	2.1	2.3
Lake States:										
Michigan	46.00	43.90	41.50	39.20	42.50	5.1	5.5	6.1	5.6	6.0
Wisconsin	53.20	43.70	42.40	50.30	51.10	6.5	6.7	6.8	7.8	7.8
Minnesota	60.00	52.80	48.20	52.10	54.10	7.6	9.0	9.1	8.5	8.4
Corn Belt:										
Ohio	72.20	65.90	58.40	62.00	66.70	6.1	6.5	6.0	6.1	6.0
Indiana	92.70	83.10	74.30	73.90	78.00	7.1	7.7	7.4	7.2	7.0
Illinois	103.80	100.10	86.10	83.20	87.10	7.1	7.8	7.6	6.8	6.3
Iowa	98.40	83.00	75.70	82.10	91.40	8.5	9.0	9.3	8.4	8.3
Missouri	46.60	42.10	38.60	44.70	47.00	8.0	8.2	7.4	8.3	8.2
Northern Plains:										
North Dakota	25.70	26.90	23.40	25.40	24.20	7.4	8.1	7.7	8.1	8.1
South Dakota	20.40	20.90	18.40	18.90	20.90	8.4	8.4	10.2	8.8	7.8
Appalachia:										
Virginia	29.40	30.20	30.50	28.70	29.20	2.8	3.1	2.6	2.7	1.8
West Virginia	19.60	19.30	21.30	21.40	19.90	4.4	4.0	4.0	3.5	2.9
North Carolina	45.80	35.60	29.60	28.40	34.10	3.7	3.4	2.6	2.4	2.5
Kentucky	42.00	46.00	43.20	42.90	41.10	4.7	5.5	6.2	4.9	5.0
Tennessee	35.40	41.20	34.90	34.70	39.10	4.1	5.4	4.2	3.8	4.3
Southeast:										
South Carolina	24.70	22.10	19.80	21.50	24.80	3.2	2.8	2.8	2.6	3.1
Georgia	28.30	25.40	25.00	26.80	28.40	4.5	3.9	3.2	3.5	3.3
Alabama	27.10	24.60	23.80	29.30	25.70	4.3	3.7	3.8	4.9	4.0
Delta States:										
Mississippi	37.20	28.50	24.70	30.40	31.80	4.9	4.5	4.2	5.6	5.7
Arkansas	*	39.70	34.30	35.80	39.80	*	5.8	5.8	6.0	5.9
Louisiana	47.10	37.90	33.40	36.00	44.10	2.8	2.4	3.2	3.7	4.9

* = Insufficient information.

1/ Current dollars. Estimated cash rent as a percent of per acre value of rented farmland.

Table 5--Cropland rented for cash: Average gross cash rent per acre and rent as a percent of value, selected States, 1985-89 1/

State	Rent per acre					Rent to value				
	1985	1986	1987	1988	1989	1985	1986	1987	1988	1989
	Dollars					Percent				
Northeast:										
Maine	28.70	27.00	31.80	36.90	36.40	4.5	5.4	4.1	5.4	3.2
Vermont	28.20	26.00	31.30	45.20	38.20	4.1	3.0	3.2	3.2	3.7
New York	34.80	30.00	32.00	31.30	37.80	5.0	5.1	4.2	3.7	3.8
New Jersey	43.20	46.00	48.00	61.10	67.40	1.1	0.9	0.5	0.6	0.3
Pennsylvania	43.00	37.20	40.00	42.70	46.50	2.5	2.7	2.5	2.4	1.9
Delaware	66.80	64.50	61.40	51.70	57.10	3.8	3.7	3.0	2.9	2.7
Maryland	63.60	54.50	50.80	50.50	55.10	2.7	3.3	2.7	2.0	1.8
Lake States:										
Michigan	51.10	47.70	41.90	41.70	44.20	5.5	5.8	5.9	5.9	5.9
Wisconsin	53.10	48.80	44.80	45.40	50.90	6.3	7.0	7.3	7.3	7.7
Minnesota	62.20	53.80	47.80	52.70	59.80	7.8	8.7	9.0	8.5	8.4
Corn Belt:										
Ohio	72.60	70.30	63.20	65.60	70.80	5.4	6.5	5.6	6.3	6.4
Indiana	95.70	85.60	77.00	77.00	83.10	7.3	7.5	7.5	7.2	7.2
Illinois	110.10	99.90	85.70	89.20	94.30	7.2	7.7	7.6	7.1	6.5
Iowa	102.60	87.60	80.30	86.30	95.80	8.4	9.3	9.8	8.6	8.2
Missouri	56.50	54.40	48.30	54.70	59.80	8.5	9.0	9.1	9.1	8.9
Northern Plains:										
North Dakota	31.70	29.70	28.20	28.80	29.40	7.6	8.1	8.4	8.1	8.4
South Dakota	29.40	26.40	25.50	27.10	27.30	8.3	9.2	10.0	9.5	8.8
Nebraska--										
(Nonirrigtd)	47.10	46.70	42.30	48.50	51.30	8.6	10.4	10.3	10.2	8.4
(Irrigated)	92.50	86.30	81.20	85.50	100.10	9.6	10.6	11.6	10.5	9.8
Kansas--										
(Nonirrigtd)	32.40	30.30	28.60	30.60	30.20	7.2	8.0	7.8	8.3	7.6
(Irrigated)	61.50	58.40	59.70	54.10	62.50	8.7	9.8	10.4	9.8	10.3
Appalachia:										
Virginia	37.60	*	37.70	36.20	37.40	3.0	*	3.2	2.9	2.2
West Virginia	25.30	25.60	31.70	29.70	35.70	4.2	4.3	4.2	4.6	3.8
North Carolina	41.40	39.50	33.70	34.00	38.70	2.0	3.5	2.8	2.6	2.8
Kentucky	50.70	53.60	53.30	52.70	62.10	5.2	6.0	6.8	6.1	6.5
Tennessee	45.80	47.40	39.90	46.60	46.80	4.8	5.8	4.8	5.3	5.9
Southeast:										
South Carolina	27.00	25.50	22.40	23.00	26.00	3.5	2.9	3.2	2.9	3.1
Georgia	30.30	27.80	26.20	30.70	32.80	4.3	3.2	3.9	4.2	4.0
Alabama	29.50	29.70	28.50	30.40	29.70	4.7	4.3	4.4	4.8	4.1
Florida	*	94.60	99.20	106.90	114.10	*	2.6	3.1	3.0	3.1
Delta States:										
Mississippi	41.00	35.00	31.20	36.30	40.60	5.2	5.1	5.0	5.8	6.3
Arkansas	51.00	48.20	44.40	50.40	52.00	6.4	6.5	6.5	7.2	6.4
Louisiana	50.40	45.10	36.50	44.60	55.00	3.2	2.7	3.6	4.8	6.0
Southern Plains:										
Oklahoma--										
(Nonirrigtd)	28.50	26.50	23.00	24.30	25.80	4.2	4.7	4.8	5.3	5.1
(Irrigated)	39.60	*	37.20	33.70	36.10	5.0	*	8.3	6.8	6.8
Texas--										
(Nonirrigtd)	21.30	20.20	19.90	20.50	22.60	1.9	2.2	2.3	2.5	3.1
(Irrigated)	43.60	39.60	40.60	41.10	49.50	4.6	5.1	5.4	4.8	6.1
Mountain:										
Montana--										
(Nonirrigtd)	20.30	22.20	21.70	20.30	23.90	2.9	8.4	10.1	7.8	8.4
(Irrigated)	61.60	55.90	41.70	42.00	54.40	3.6	6.6	6.1	5.6	8.5
Idaho--										
(Nonirrigtd)	32.50	32.40	34.10	30.80	38.70	5.7	6.0	7.6	6.7	7.0
(Irrigated)	106.60	85.40	77.80	91.20	96.00	6.8	7.7	7.9	8.5	8.1
Wyoming--										
(Nonirrigtd)	21.40	13.80	11.20	12.00	14.30	7.8	6.9	7.8	7.8	8.5
(Irrigated)	55.90	47.50	42.50	42.50	45.30	3.1	7.2	7.0	8.7	8.7
Colorado--										
(Nonirrigtd)	33.10	22.80	21.10	24.30	28.90	7.1	6.0	5.5	4.7	6.3
(Irrigated)	82.20	63.40	59.10	63.80	68.70	6.3	6.0	6.6	6.7	7.5
New Mexico--										
(Irrigated)	80.70	79.80	69.80	74.40	70.50	3.4	3.0	2.7	2.3	3.9
Arizona--										
(Irrigated)	142.80	134.30	124.10	146.40	153.40	1.4	1.1	1.3	1.4	1.5
Utah--										
(Nonirrigtd)	35.30	25.40	23.50	25.80	27.30	2.5	2.3	3.3	3.3	3.8
(Irrigated)	61.30	63.70	54.60	54.30	56.00	2.0	2.4	2.9	2.8	3.3
Nevada--										
(Irrigated)	82.90	62.80	80.00	77.40	79.30	5.5	4.6	4.9	5.0	7.0
Pacific:										
Washington--										
(Nonirrigtd)	61.00	42.40	42.60	42.30	50.90	5.3	4.5	5.4	5.7	6.8
(Irrigated)	*	118.30	96.60	89.70	92.50	*	7.4	7.3	5.1	6.5
Oregon--										
(Nonirrigtd)	50.30	50.70	49.70	42.20	55.70	4.1	6.6	5.7	4.4	7.2
(Irrigated)	122.40	96.00	88.10	81.50	84.00	7.6	7.6	6.2	5.8	7.9
California--										
(Irrigated)	179.40	152.50	160.20	166.80	184.20	4.1	4.0	3.3	3.9	5.0

* = Insufficient information.

1/ Current dollars. Estimated cash rent as a percent of per acre value of rented cropland.

reported for California (\$184.20) and Arizona (\$153.40), but the largest 1988-89 percentage increases were in Nebraska (17 percent), Texas (20 percent), and Montana (30 percent).

Rents for nonirrigated cropland were also generally higher in the Plains, Mountain, and Pacific regions, especially in Idaho, Washington, and Oregon. Rent-to-value percentages for both irrigated and nonirrigated cropland were up in most States in 1989.

Cropland rents in all other regions, which include some irrigated cropland, tended to be higher in 1989, continuing last year's increases. Highest rents were reported for the Corn Belt, ranging from \$59.80 in Missouri to close to \$95 for Iowa and Illinois. Even though they increased in 1988 and 1989, rents for most Corn Belt States remain about 20 percent below their highs in the early 1980's. Rent-to-value percentages in 1989 are comparable to last year's, but relatively high compared with percentages in the early 1980's, indicating that current rents are high relative to values or that farmland is undervalued.

Rents were also higher in Appalachia (particularly Kentucky), the Southeast, and the Delta States (particularly Louisiana). Changes in rent-to-value percentages were mixed.

Pasture Rents Near 1988 Levels

Cash rents for pasture were near 1988 levels for most States, but noticeably higher in the Delta States, Idaho, and Michigan (table 6). Record cattle prices helped maintain and increase pasture rents in most areas.

Pasture rents are relatively high in States east of the Plains regions. For most States, current rents are reasonably comparable to rents in the early 1980's. Current rent-to-value percentages, however, are higher, indicating that rents have not come down as pasture values have fallen.

Pasture rents in the Plains States and several Mountain States are relatively low because of more widespread grazing of ranchland. Rent-to-value percentages in the Northern Plains are well above early 1980 levels while those in the Southern Plains are comparable.

Pasture rents are also relatively high in the Pacific region, where pastureland is more intensively managed than range-land in the Mountain region.

Cattle grazing fees for privately owned nonirrigated land leased on an animal unit month basis varied during 1987-88 (table 7). Fees in 1988 were substantially higher in Montana (\$9.79), Utah (\$8.70), and Wyoming (\$8.93).

The 16-State average was \$8.98, up from \$8.09 a year earlier.

Figure 7
Average Cash Rents for Cropland by Region

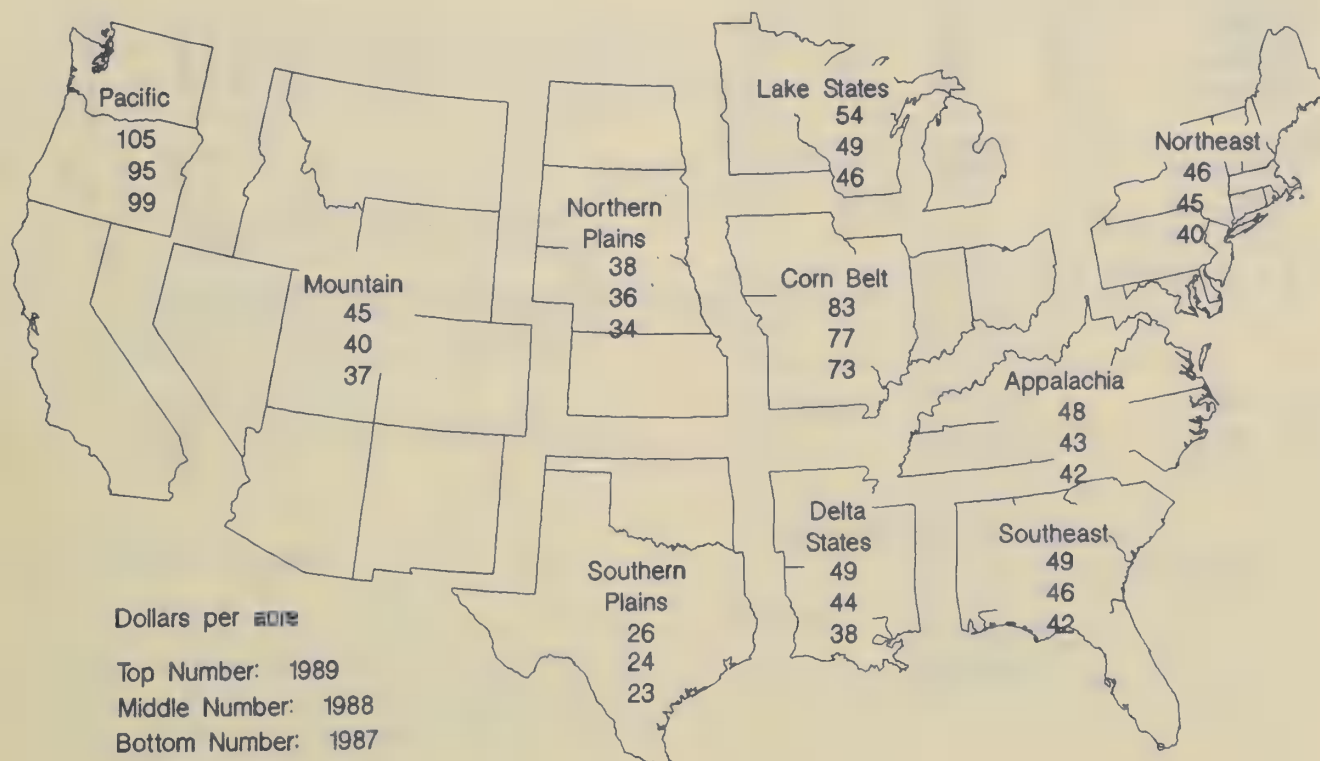


Table 6--Pasture rented for cash: Average gross cash rent per acre and rent as a percent of value, selected States, 1985-89 1/

State	Rent per acre					Rent to value				
	1985	1986	1987	1988	1989	1985	1986	1987	1988	1989
	Dollars					Percent				
Northeast:										
Maine	16.30	■	16.30	21.40	17.60	4.7	■	2.2	4.3	1.3
Vermont	17.00	■	14.40	19.00	17.20	3.8	■	2.7	2.0	2.2
New York	15.90	17.90	14.40	16.50	16.00	4.9	5.7	3.5	3.7	3.4
Pennsylvania	19.70	18.00	18.60	19.90	22.90	2.2	2.2	1.9	1.9	2.0
Delaware	45.30	35.90	43.20	34.40	34.00	3.6	2.6	3.4	3.3	2.7
Maryland	27.90	24.30	32.10	31.90	30.80	1.8	2.0	1.8	2.0	1.6
Lake States:										
Michigan	16.10	17.80	17.50	15.90	20.00	1.5	4.2	4.1	3.5	4.7
Wisconsin	23.20	22.00	20.20	21.40	23.30	5.9	6.7	7.2	7.2	6.7
Minnesota	19.10	16.00	14.50	18.10	17.80	5.4	6.4	7.0	7.2	6.6
Corn Belt:										
Ohio	25.90	24.90	25.10	28.40	27.60	4.2	4.9	5.3	4.7	4.5
Indiana	36.50	35.60	35.70	31.30	33.90	5.5	5.8	6.4	5.8	5.6
Illinois	34.30	31.90	27.70	28.60	32.80	5.8	6.2	6.1	6.3	6.0
Iowa	36.00	29.20	28.10	28.80	30.00	7.6	7.7	8.5	8.6	7.7
Missouri	18.90	22.00	19.40	22.70	22.80	4.9	6.2	5.4	6.0	6.2
Northern Plains:										
North Dakota	9.00	7.80	7.80	8.50	8.40	5.6	5.8	6.7	6.6	6.8
South Dakota	8.10	7.30	6.30	6.40	7.10	7.3	7.5	8.7	8.3	7.9
Nebraska	12.40	8.90	9.80	11.40	12.30	8.5	7.6	9.4	10.9	7.7
Kansas	13.10	13.20	10.80	11.80	10.80	4.5	5.9	5.5	5.5	5.2
Appalachia:										
Virginia	22.30	20.00	22.80	20.40	21.00	2.5	2.7	2.8	2.4	1.6
West Virginia	12.70	15.90	14.80	14.00	14.50	2.9	4.0	3.0	3.2	3.1
North Carolina	21.40	20.60	19.20	20.70	22.50	2.0	1.9	1.7	1.9	1.8
Kentucky	27.80	24.80	24.30	27.50	25.50	3.8	4.2	4.4	4.7	4.0
Tennessee	23.50	23.60	21.60	22.70	26.40	3.9	4.2	3.0	3.3	3.3
Southeast:										
South Carolina	17.00	16.10	15.60	17.60	18.40	2.7	2.4	2.3	2.2	2.2
Georgia	21.00	19.40	19.20	20.80	21.00	3.2	3.2	2.9	2.9	2.4
Florida	■	20.60	32.30	25.20	27.10	■	1.2	1.5	0.9	1.2
Alabama	16.60	17.10	17.10	18.60	18.00	3.7	3.3	3.5	3.8	3.7
Delta States:										
Mississippi	19.10	14.00	12.80	14.70	15.90	3.2	2.7	2.4	3.4	3.4
Arkansas	■	17.60	14.10	16.00	19.90	■	3.4	3.1	3.7	3.7
Louisiana	22.40	18.40	17.20	14.70	16.10	1.4	1.2	2.0	1.8	2.1
Southern Plains:										
Oklahoma	12.00	12.90	10.20	10.40	9.50	2.6	3.4	3.0	3.3	2.8
Texas	8.30	7.80	7.70	7.80	7.30	0.9	1.0	1.0	1.2	1.4
Mountain:										
Montana	6.00	4.80	5.20	4.20	5.00	2.5	4.1	5.0	3.3	6.3
Idaho	15.40	13.80	16.20	16.10	20.60	7.4	4.3	4.5	6.3	7.3
Wyoming	5.10	5.80	5.20	4.50	5.50	1.4	5.8	5.2	5.9	5.2
Colorado	12.10	9.90	8.30	9.30	7.30	1.9	5.3	3.5	3.1	2.3
Utah	20.90	23.20	18.30	17.10	19.00	1.5	1.9	2.5	2.3	3.2
Pacific:										
Washington	40.60	30.80	23.60	32.40	29.10	2.9	6.0	3.3	4.9	6.8
Oregon	■	21.20	16.10	14.50	14.40	■	7.7	4.7	4.8	6.5
California	29.20	■	30.30	33.80	37.10	0.8	■	0.9	1.4	4.0

■ = Insufficient information.

1/ Current dollars. Estimated cash rent as a percent of per acre value of rented pasture.

Table 7.--Cattle grazing rates on privately owned nonirrigated land, 1986-88

State	1986	1987	1988
Dollars per animal unit month			
Arizona	5.82	7.19	4.47*
California	7.93	8.46	9.43*
Colorado	8.28	8.27	8.43
Idaho	7.51	6.60	6.99
Kansas	8.17	8.87	9.42
Montana	8.30	7.94	9.79
Nebraska	9.75	10.29	10.40
Nevada	2.95	7.31	1/
New Mexico	5.98	5.82	5.46*
North Dakota	7.63	7.41	7.67
Oklahoma	5.08	5.68	6.09
Oregon	7.69	5.91	7.03*
South Dakota	9.19	8.61	9.98
Texas	8.79	8.30	8.06
Utah	5.34	5.98	8.70
Washington	9.77	9.55	7.28*
Wyoming	8.31	6.31	8.93
16-State average 2/	8.33	8.09	8.98

* = Coefficient of variation exceeds 25 percent.

1/ Insufficient number of reports for an accurate estimate of grazing rates. 2/ All States except Texas.

Source: USDA, NASS. Agricultural Prices. PR 1 (12-88). Dec. 1988.

Farmland Transfers

The annual Farmland Market Survey of real estate brokers and appraisers, commercial bankers, officials of Federal lending institutions, farmers, and ranchers provides data on acreage, value, and terms of sale of recent farm and ranch transfers. Respondents also furnish information on types of buyers and sellers, tenure before and after sale, sources of financing, and the probable use of the land 5 years after the sale.

Survey participants were requested to give details on up to five of the most recent voluntary and estate sales completed between September 1, 1988, and February 1, 1989, in their county(s). Sales must involve at least 10 acres of real estate used primarily for agriculture.

Participants in the 1989 survey reported details on nearly 6,750 sales comprising nearly 2 million acres. Voluntary and estate sales accounted for two-thirds of the sales (60 percent in 1988) and family transfers for 15 percent, the same as in 1988. Another 15 percent included foreclosure, bankruptcy, and condemnation sales and transfers (21 percent in 1988) and 4 percent fell into the "other sales and transfers" category, unchanged from 1988.

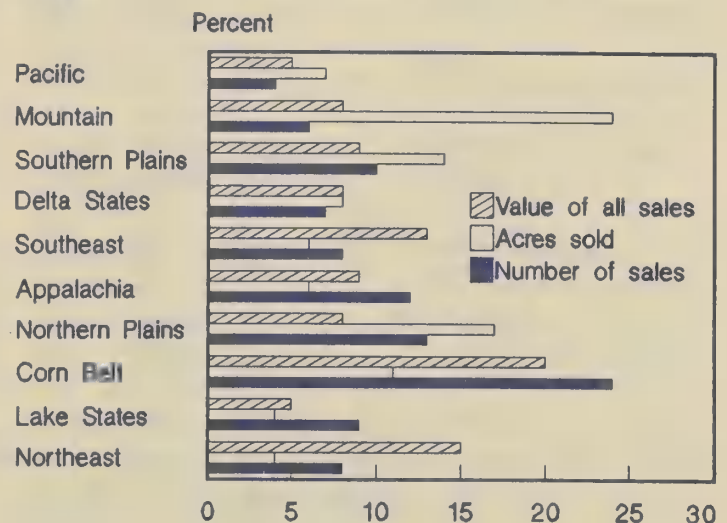
Corn Belt Accounts for One-fourth of Reported Sales

The percent distributions of number of sales, acres sold, and value of all sales varied widely among regions (figure 8). Although one-fourth of all sales occurred in the Corn Belt, these sales accounted for only 11 percent of total acreage in

all sales which, in turn, indicates that acres per sale were relatively small. Corn Belt sales averaged only 139, one of the lowest regional averages (table 8). Yet with a high price per acre (\$1,088), the Corn Belt had 20 percent of the value of all sales.

Sales in the Mountain region portray a different situation with only 6 percent of all sales, but one-fourth of all acreage sold. Because sales often include large tracts of grazing land, the acres per sale averaged nearly 1,180, well above other regions. Price per acre, however, averaged only \$236, and the region's share of total value was only 3 percent.

Figure 8
Regional Distribution of Farmland Transfers, 1988



High per acre values were reported for the Northeast (\$2,105) and the Southeast (\$1,455). Northeast sales represented only 8 percent of the number of sales and 4 percent of all acres sold, but 15 percent of the total sales value. Similarly, the Southeast had 8 percent of the sales, 6 percent of the acreage, but 13 percent of the total value.

Acres Per Sale Lower But Price Higher

In 1989, reported sales nationwide averaged 290 acres per sale and \$639 per acre (table 8). Acres per sale were lower, but the average price was above a year earlier when several large tracts of relatively low-priced rangeland sold in the Mountain and Southern Plains regions led to a significantly higher U.S. average acreage (317) and a lower average price (\$566).

Acres per sale were highest in the Mountain (1,179), Pacific (567), Southern Plains (397), and Northern Plains (383) regions. Pasture and grazing were reported as the principal use on half or more of the land sold in all four regions, ranging up to 76 percent in the Mountain region (table 9). These regions, except the Pacific, had the lowest average prices per acre among all regions (table 8). High prices in California kept the Pacific region average (\$1,192) relatively high.

Highest per acre prices were reported in the Corn Belt (\$1,088) and coastal regions—Northeast (\$2,105), Appala-

chia (\$1,060), Southeast (\$1,455), and the Pacific (\$1,192). Except for the Pacific region, acres per sale were relatively small, ranging from 137 in the Northeast to 211 in the Southeast. Cropland was the principal land use in these regions, accounting for 50 percent or more of all farmland values and up 92 percent in the Corn Belt (table 9).

Several indicators point to farmland being bought in the Corn Belt for expansion of existing operations. Farm size continued to increase in 1988, averaging 271 acres. However, the average size of tract purchased was only 139 acres (table 8), and the price per acre (\$1,088) was above the \$981 per acre average for all farmland in the region (table 1). Also, two-thirds of acreage sold was bought by owner-operators and tenants and one-third by nonfarmers (table 10). About 94 percent of farmland purchased is expected to remain in agriculture over the next 5 years.

Conditions in Appalachia differ from those in the Corn Belt. First, farm size in 1988 averaged 153 acres, comparable to the average size of tract bought (130 acres). The average price per acre was \$1,060 in 1989, similar to the region-wide average value of farmland of \$1,028 (table 1). Also, slightly over 50 percent of the farmland sold was bought by owner-operators and tenants, while 44 percent was bought by nonfarmers. Only about three-fourths of the farmland purchased is expected to remain in agriculture over the next 5 years.

Table 8.--Farmland transfers: Average acres per sale and price per acre, 1981-89 1/

Region	1981	1982	1983	1984	1985	1986	1987	1988	1989
Acres per sale									
Northeast	140	131	114	143	132	138	138	141	137
Lake States	164	154	126	147	129	121	140	144	139
Corn Belt	132	125	127	133	127	129	134	142	139
Northern Plains	338	314	307	270	297	387	323	403	383
Appalachia	136	102	105	112	110	123	131	115	130
Southeast	194	225	191	181	210	185	219	194	211
Delta States	201	220	223	224	164	196	277	237	349
Southern Plains	315	449	305	340	324	325	356	529	397
Mountain	1,329	1,064	934	1,009	1,380	1,051	977	1,891	1,179
Pacific	384	287	270	225	245	165	245	383	567
47 States	263	271	219	232	259	245	236	317	290
Price per acre									
Northeast	1,142	1,237	1,282	1,142	1,182	1,248	1,658	1,768	2,105
Lake States	1,257	1,329	1,201	1,119	945	806	666	644	744
Corn Belt	2,006	1,819	1,468	1,459	1,187	944	870	955	1,088
Northern Plains	565	536	505	525	408	265	265	260	294
Appalachia	1,096	1,078	987	1,151	981	984	961	951	1,060
Southeast	1,080	1,130	1,118	1,234	935	1,064	1,037	1,253	1,455
Delta States	1,224	1,351	1,226	1,120	924	793	662	527	565
Southern Plains	581	528	678	647	598	792	448	321	379
Mountain	290	382	382	364	306	274	273	160	236
Pacific	1,429	1,973	1,693	2,211	1,856	2,079	1,447	1,310	1,192
47 States	886	919	858	888	747	725	607	566	639

1/ Reported acres and prices for each State are weighted to regional and U.S. averages according to the State's acreage of land in farms. Arizona is excluded from averages for the Mountain region and the 47 States. Based on reported sales during the 5 months ending March 1, 1981-85, and the 5 months ending February 1, 1986-89.

Table 9.-- Principal use of farmland prior to sale: Percent of acres and value, 1989 ^{1/}

Region	Nonirrigated cropland	Irrigated cropland	Pasture and grazing land	Woodland on farms
Percent of acres				
Northeast	81	2	10	7
Lake States	89	3	6	2
Corn Belt	80	2	15	3
Northern Plains	42	8	50	•
Appalachia	41	4	38	17
Southeast	41	10	34	15
Delta States	40	36	17	7
Southern Plains	16	13	68	3
Mountain	13	11	76	•
Pacific	25	23	52	•
48 States	58	12	47	3
Percent of value				
Northeast	84	3	10	3
Lake States	92	3	4	1
Corn Belt	90	2	7	1
Northern Plains	59	20	21	•
Appalachia	43	7	40	10
Southeast	26	41	23	10
Delta States	37	40	17	6
Southern Plains	22	16	60	2
Mountain	20	47	33	•
Pacific	22	63	15	•
48 States	55	20	21	4

1/ Based on reported sales during the 5 months ending February 1, 1989.

Owner-operators Continue To Be Most Frequent Buyers

The proportions of farmland buyers by type at the national level have remained similar for several years (table 10).

Owner-operators, including part-owners, accounted for 57 percent of reported purchases in 1989, while tenants (11 percent), retired farmers (2 percent), and nonfarmers (29 percent) comprised the rest.

Owner-operators bought most frequently in the Northern Plains, Mountain, and Pacific regions where they were involved in 70 percent or more of the purchases. Shares in other regions ranged from 45 to 60 percent. Tenants accounted for 10 to 16 percent of purchases in all regions, except Appalachia (7 percent) and the Southeast (4 percent). Nonfarmers were most active in the eastern regions, accounting for about 45 percent of the purchases in the Northeast, Appalachia, and the Southeast. They were least active in the Northern Plains (11 percent), Mountain region (17 percent), and Pacific region (14 percent).

Regional distributions of the number of purchases have remained fairly stable. However, a shift away from nonfarmers to owner-operators took place in the Northern Plains, Southeast, and Pacific regions between 1988 and 1989. Nonfarmers were relatively active in the Northeast (44 percent) while tenant operators accounted for only 10 percent of purchases, compared with 17 percent a year earlier.

Although owner-operators' share of purchases at the national level was similar to preceding years, they bought only 57 percent of all acreage sold, compared with 64 percent a year ago (table 10). The reduced share indicates that the average size of tract purchased was smaller than last year's. Nonfarmers, on the other hand, still accounted for 29 percent of all purchases in 1989 (30 percent in 1988), but increased their share of the acreage from 25 to 32 percent. On the average, they bought relatively larger tracts in 1989.

The change in average size of tract bought is particularly evident in the Pacific region, where owner-operators' share of all purchases rose from 62 to 73 percent, but because tracts were smaller in 1989, their share of the acreage dropped from 80 to 60 percent. Nonfarmers, on the other hand, had a smaller share of purchases in 1989 (14 percent) but were buying larger tracts (34 percent of all acreage).

Looking at value of purchases, the 1989 shares among buyer groups at the national level are similar to those in preceding years. However, some regional adjustments which parallel changes in percent distribution of acres occurred. In the Delta States and Mountain regions, owner-operators accounted for a much lower share of total value while nonfarmers increased their shares. The opposite occurred in the Southeast where owner-operators increased their shares.

Table 10.--Farmland buyers: Percent of purchases, acres, and value by type of buyer, 1987-89 1/

Region	Buyer											
	Tenant			Owner-operator 2/			Retired farmer			Nonfarmer		
	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989
	Percent of purchases											
Northeast	10	17	10	48	44	45	1	1	1	41	39	44
Lake States	16	20	16	58	53	50	1	1	1	25	26	25
Corn Belt	11	12	12	53	58	50	4	2	2	27	28	28
Northern Plains	12	13	15	69	67	70	2	2	4	16	18	11
Appalachia	7	5	7	47	48	46	2	1	2	42	42	45
Southeast	3	4	4	45	44	51	1	1	2	50	51	44
Delta States	12	8	10	47	53	53	3	4	3	38	35	34
Southern Plains	12	13	13	47	53	54	4	2	2	37	31	31
Mountain	5	10	11	59	70	70	2	*	1	23	20	17
Pacific	5	13	12	65	62	73	2	1	1	28	25	14
48 States	10	12	11	56	56	57	3	2	2	31	30	29
Percent of acres												
Northeast	11	22	11	49	41	47	1	1	2	39	37	40
Lake States	17	23	17	59	52	60	1	1	1	23	25	22
Corn Belt	10	12	10	53	57	56	3	2	2	34	29	32
Northern Plains	9	16	17	71	63	63	1	1	5	18	20	15
Appalachia	8	8	4	52	51	49	1	*	2	40	41	44
Southeast	3	2	4	55	42	57	*	*	1	42	55	39
Delta States	5	8	8	42	54	40	2	2	1	51	36	51
Southern Plains	7	14	10	64	54	47	2	2	1	27	30	42
Mountain	3	4	5	69	78	67	1	1	*	27	16	28
Pacific	6	4	5	48	80	60	2	*	*	43	16	34
48 States	8	10	9	60	64	57	1	1	2	31	25	32
Percent of value												
Northeast	7	11	5	47	32	39	1	*	1	46	57	55
Lake States	18	23	17	60	52	60	1	1	1	21	24	22
Corn Belt	10	11	10	59	57	53	4	2	2	27	30	35
Northern Plains	11	12	13	72	68	71	2	1	4	15	19	11
Appalachia	6	8	5	49	50	51	1	1	1	44	41	43
Southeast	2	3	1	52	33	59	*	*	1	46	64	39
Delta States	7	9	7	43	55	41	1	2	2	49	34	50
Southern Plains	7	13	10	45	45	49	2	3	1	46	39	40
Mountain	2	5	7	61	78	61	2	1	1	35	17	31
Pacific	6	6	13	65	72	71	2	*	1	27	22	16
48 States	7	10	8	56	54	54	2	1	1	35	35	37

* = Less than 0.5 percent.

1/ Percentages may not add to 100 because of rounding. Based on reported sales during the 5 months ending February 1, 1987-89. 2/ Includes part- and full-owner operators.

Fewer Sales By Active Farmers

The proportion of sales by active farmers who either remained in, retired from, or quit farming has declined during the 1980's. This group accounted for 38 percent of the sales in 1989, down from 40 percent in 1988, and 45 percent in 1982 (table 11). Meanwhile, the percentage of sales by nonfarmers increased, accounting for 28 percent in 1989. Sales by estates and retired farmers have averaged around 20 and 12 percent, respectively, for several years.

Looking at regional distributions, the proportion of sales by active farmers in 1989 ranged from around 30 percent in the predominantly agricultural Northern Plains and Corn Belt regions to 55 percent in the Pacific region (41 percent in

1988). Estate sales accounted for 25-30 percent of sales in Appalachia, the Corn Belt, and the Northern Plains but only 10 percent in the Northeast and Pacific regions. Nonfarmers had the highest percentage of sales in the Mountain, Delta States, and Lake States regions, accounting for around one-third of the sales in all regions.

National and regional percent distributions of acres sold and value of sales among types of sellers are generally consistent with the percent distributions of the number of sales.

As active farmers have accounted for a smaller proportion of sales in the 1980's, so have their proportions of acres sold and total value of acres sold.

Table 11.--Farmland sellers: Percent of sales, acres, and value by type of seller, 1987-89 1/

Region	Seller														
	Active farm operator who														
	Estate			Remained in farming			Retired or quit			Retired farmer			Nonfarmer/nonfarm business		
	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989
	Percent of sales														
Northeast	13	11	10	25	26	21	27	28	28	14	15	18	21	20	23
Lake States	12	11	14	20	16	15	20	23	25	14	14	14	34	35	32
Corn Belt	25	23	29	19	18	15	18	17	15	12	12	13	26	31	28
Northern Plains	22	20	29	22	18	17	16	19	11	13	12	17	27	31	26
Appalachia	20	25	25	22	22	22	22	19	17	10	10	12	26	24	24
Southeast	12	11	18	25	30	30	22	16	14	11	7	10	29	36	28
Delta States	11	10	10	30	28	29	24	13	17	9	10	9	26	38	34
Southern Plains	16	20	21	30	27	25	13	15	15	8	10	10	33	28	29
Mountain	13	10	11	32	27	26	16	22	18	11	9	9	27	32	36
Pacific	9	10	10	32	22	35	9	19	20	13	9	11	30	40	24
48 States	18	18	21	24	22	21	19	18	17	12	11	13	28	31	28
Percent of acres															
Northeast	13	10	11	21	27	19	34	30	34	13	15	18	18	18	21
Lake States	13	11	13	17	16	16	21	26	27	13	12	12	36	36	32
Corn Belt	20	20	25	17	20	17	18	18	15	12	10	11	33	33	32
Northern Plains	19	20	17	27	20	21	15	23	16	9	10	15	30	26	31
Appalachia	20	26	29	20	22	19	29	20	15	9	10	9	24	22	27
Southeast	16	7	19	24	35	36	24	12	16	6	10	8	30	36	21
Delta States	13	8	12	37	23	26	12	9	12	4	5	3	33	56	47
Southern Plains	32	18	23	31	28	35	11	22	13	5	5	6	21	26	23
Mountain	19	19	4	29	25	33	10	30	16	10	2	8	32	23	39
Pacific	6	10	4	30	24	19	6	18	19	21	5	10	37	43	48
48 States	18	17	15	25	24	26	16	23	16	10	7	10	30	29	33
Percent of value															
Northeast	18	12	8	27	40	31	29	23	25	9	8	13	17	17	23
Lake States	13	12	13	17	15	16	22	25	27	15	13	13	34	34	31
Corn Belt	25	23	31	19	22	16	16	17	14	13	10	10	27	28	29
Northern Plains	20	22	26	26	21	21	17	20	13	12	11	15	26	27	25
Appalachia	17	29	27	21	25	20	25	20	17	6	10	10	30	17	26
Southeast	13	6	13	40	47	51	23	15	16	4	5	6	21	28	15
Delta States	9	7	11	41	28	30	14	10	12	4	6	4	33	49	43
Southern Plains	16	18	24	35	29	25	14	16	14	6	6	7	28	30	30
Mountain	13	9	5	52	26	46	10	32	15	7	4	7	18	30	27
Pacific	8	13	6	46	33	41	8	20	21	8	4	11	30	31	21
48 States	16	16	18	32	29	29	18	20	17	9	8	10	25	28	26

1/ Percentages may not add to 100 because of rounding. Based on reported sales during the 5 months ending February 1, 1987-89.

Tenure Before And After Sale

Based on information about the tenure of operators of farmland before and after the reported sales, there was a shift from tenant-operated to owner-operated farmland in 1989. The share of acres transferred which were farmed by owner-operators increased from 41 percent before sale to 71 percent after sale.

Just over 40 percent of the acreage sold was sold by retired farmers, active farmers who retired or quit, and estates (table 11). A significant proportion of this acreage is expected to have been operated by tenants. Nearly 44 percent of all farmland sold was operated by tenants before the sale. After

the sale, however, tenants are reported to operate only about 14 percent of the farmland sold. Nearly two-thirds of the acres transferred were bought by owner-operators and former tenants. After the sale, most former tenants are expected to be owner-operators.

Hired managers operated about 10 percent of the land before and after sale. About 5 percent of the acres sold were "not farmed" both before and after sale.

Cross-tabulations of tenure groups before and after sale further point out the increasing significance of owner-operators (table 12). About 71 percent of the acres operated by owners

Table 12.--Cross-tabulations between tenancy before and after sale, in percent of acres sold, 48 States, 1989 1/

Person farming before sale	Person farming after sale				Total
	Owner	Hired manager	Tenant	Not farmed	
	Percent				
Owner	71	16	10	3	100
Hired manager	76	19	3	2	100
Tenant	71	4	21	4	100
Not farmed	56	3	3	38	100

1/ Based on reported sales during the 5 months ending February 1, 1989.

before the sale is reported to be owner-operated after the sale, while the remaining acres will be operated by hired managers (16 percent) and tenants (10 percent) or will not be farmed (3 percent). Looking at tenant-operated land before sale, 71 percent will be operated by owners after the sale, 4 percent by hired managers, 21 percent by tenants, and 4 percent will not be farmed.

Three-fourths of the acres operated by a hired manager before sale and about 55 percent of the acres not farmed will be farmed by owner-operators after the sale. Just over one-third of the land not farmed before sale will also not be farmed afterward.

The shifts to more land being farmed by owners after sale were largest in the Northern and Southern Plains, Corn Belt, Lake States, Mountain, and Pacific regions. Shifts from tenants to owner-operators were least evident in the Northeast and Delta States, where a significant portion of previously tenant-operated land will not be farmed this year. Percents of land not farmed before and also kept out of production after sale were highest in the Northeast, Appalachia, and the Delta States.

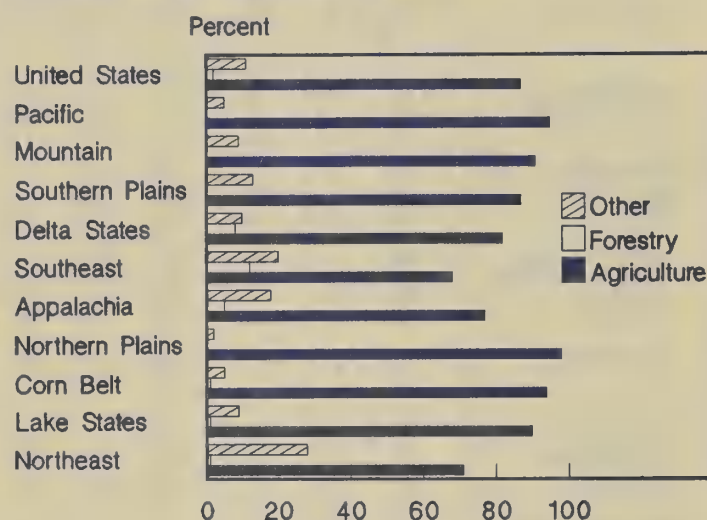
Most Farmland Sold Expected To Stay In Agriculture Over Next 5 Years

About 87 percent of the farmland recently sold is expected to remain in agriculture over the next 5 years (figure 9). Survey respondents expect 2 percent to be used in forestry, and 11 percent in other uses such as recreational areas, housing, and commercial/industrial operations. In 1988, 91, 1, and 8 percent of the farmland sold was expected to be in agriculture, forestry, and other uses, respectively, 5 years after the sale.

Percentages of farmland likely to remain in agriculture were 90 percent or higher in the Lake States, Corn Belt, Northern Plains, Mountain, and Pacific regions. Other uses were reported to be relatively important in the Northeast (28 percent), Appalachia (18 percent), and the Southeast (20 percent).

Figure 9

Probable Use of Farmland 5 Years After Purchase, by Region, 1989



Farmland expected to remain in agriculture over the next 5 years averaged 311 acres per sale and \$542 per acre (table 13). Acres and prices varied widely among regions. Farmland expected to be in other uses averaged 160 acres per sale and nearly \$1,800 per acre.

Fewer Sales Financed

The share of reported sales involving financing continued to fall in 1989. About two-thirds of sales in the 48 States involved financing, compared with 70 percent last year and around 90 percent in the late 1970's and early 1980's, when farmland values were highest (table 14).

Except for the Lake States and the Northern Plains, the percent of credit-financed transfers was lower in all regions, with the shares ranging from 56 percent in the Southeast to 80 percent in the Lake States. Back around 1980, percents ranged from 85 in the Delta States to 95 in the Lake States. A shift to more cash sales in the past year was particularly evident in the Delta States and Mountain regions, where around 75 percent was credit-financed in 1988 but just under 65 percent in 1989.

Rural Land Transfers

The 1988 survey of land transfers indicates that, nationwide, 4.6 percent of the parcels of rural land and 3.5 percent of all of rural land changed ownership in 1987. The transfer rate appears to have changed little from 1986 when 5 percent of all parcels and 3.3 percent of the acres were transferred. (This survey is independent of the Farmland Market Survey discussed in the Farmland Transfers section of this report and differs in scope, procedures, and persons surveyed.)

Because small tracts of land transfer more frequently than larger tracts, the national rate of parcel transfers in 1987 was greater than the rate of acreage transfers. For comparison, the transfer rate of parcels identified as detached residential properties (involving relatively small tracts) in urban areas was 7.4 percent in 1987.

What Is Rural Land?

Rural land includes farms, ranches, forest land, open idle land, and wasteland. Platted parcels in residential or industrial use, and in some areas, parcels of fewer than 5 acres, are excluded. According to Census of Government estimates, rural land comprised 16 million parcels in 1987. At a transfer rate of 4.6 percent, approximately 736,000 rural parcels changed ownership. Agricultural uses accounted for about 50 percent of the parcels transferred and 74 percent of the acres transferred.

Regional Variation In Transfers

Regional differences in transfer rates may reflect more than levels of market activity. Regions with a higher

proportion of small parcels tend to show higher rates of transfer. Also, nonagricultural parcels turn over more frequently than agricultural parcels. Thus, more densely settled regions and those with a greater proportion of parcels in nonagricultural uses, such as the Northeast, Southeast, and Delta States, tend to have higher rates of transfer than the predominately agricultural regions.

Lower transfer rates in the Lake States, Northern Plains, Corn Belt, and Mountain region may reflect not only a less active sales market, but a higher proportion of larger, whole farms and ranches and a smaller proportion of nonagricultural parcels being transferred.

Sources of Transfer Data

Data in the transfer survey are based on public information from title record and assessment offices of county, township, and parish governments. Respondents provide information on the number of transactions, acreage transferred, and market values.

The land transfer survey includes all methods by which land changes ownership, including sales, foreclosure, and inheritance. In 1987, 52 percent of the parcels transferred and 38 percent of the acreage transferred were bona fide sales, that is, "arm's-length" market sales. The remaining transfers represented other sales, foreclosures, gifts, inheritances, swaps, and other conveyances. Although bona fide sales are most commonly regarded as the value-setting transactions, they do not represent all transactions, or even all sales.
[Gene Wunderlich]

Annual Rates of Rural Land Transfers						
Region	Parcels		Acres		Value	
	1986	1987	1986	1987	1986	1987
Percent						
Northeast	5.1	5.8	4.2	3.7	5.7	6.6
Lake States	2.5	1.9	2.3	2.4	2.4	2.4
Corn Belt	3.7	4.6	3.6	3.6	2.5	3.4
No. Plains	3.1	3.5	3.5	3.8	3.8	4.3
Appalachia	6.7	4.8	4.8	4.1	3.3	4.0
Southeast	7.4	5.4	4.6	4.4	4.7	5.2
Delta States	8.1	8.5	4.9	5.7	8.4	4.5
So. Plains	5.3	4.0	3.1	2.5	4.5	3.2
Mountain	4.2	4.8	2.1	3.3	2.2	1.2
Pacific	4.1	5.8	1.8	4.7	3.8	7.2
48 States	5.0	4.6	3.3	3.5	3.5	4.0

Table 13.--Farmland transfers: Average acres per sale and price per acre by probable use of property 5 years after purchase, 1987-89 1/

Region	Agriculture 2/			Forestry			Other 3/		
	1987	1988	1989	1987	1988	1989	1987	1988	1989
Acres per sale									
Northeast	153	139	145	*	*	140	105	137	122
Lake States	148	149	146	111	96	74	90	82	72
Corn Belt	137	144	142	99	129	209	117	117	109
Northern Plains	324	410	389	*	*	*	283	255	168
Appalachia	146	120	143	107	123	147	104	98	92
Southeast	254	197	226	228	281	191	152	164	173
Delta States	291	260	399	114	150	96	373	124	275
Southern Plains	412	522	407	*	*	318	167	590	159
Mountain	1,005	1,892	1,167	*	*	39	892	722	625
Pacific	243	400	571	*	*	80	311	204	189
48 States	252	329	311	168	185	151	182	192	160
Price per acre									
Northeast	1,292	1,435	1,738	*	*	759	2,864	4,383	4,978
Lake States	650	661	730	331	390	266	594	633	765
Corn Belt	890	918	1,103	438	645	303	713	833	1,462
Northern Plains	260	228	271	*	*	*	261	294	565
Appalachia	848	850	997	424	485	514	1,159	1,171	1,479
Southeast	930	1,174	1,166	492	491	740	1,657	1,217	3,138
Delta States	691	534	572	361	455	596	417	661	529
Southern Plains	380	309	373	*	*	525	1,045	376	657
Mountain	257	151	201	*	*	700	379	191	492
Pacific	1,552	899	483	*	*	563	1,254	3,414	1,212
48 States	599	458	542	476	505	622	1,005	1,046	1,797

* = Insufficient information or none reported.

1/ Based on reported sales during the 5 months ending February 1, 1987-89. 2/ Cropland and grazing land. 3/ Includes uses for recreation, rural residences, residential subdivisions, and commercial/industrial purposes.

Among credit-financed transfers, debt as a percent of purchase price reached 73 percent in 1989 (table 15). This represents a leveling off after last year's 72 percent, which was the first significant drop since the 1980's when debt was close to 80 percent of the purchase price.

Debt as a percent of purchase price was unchanged or higher in all regions in 1989, except the Southeast and Southern Plains. Regional percents ranged from 64 in the Southeast to 81 in the Delta States.

Commercial Banks Provide One-third of the Financing

Among farmland transfers involving financing, commercial banks provided 34 percent of the credit extended for reported sales in 1989 (table 16). Other principal sources included the Farm Credit System (29 percent) and seller financing (24 percent). Commercial banks substantially increased their share of the market since the early 1980's,

when they accounted for only 4 percent of the credit extended. During the same period, seller financing provided close to 40 percent of the credit until their share started falling in 1983. Because U.S. farmland values also began falling in 1983, some sellers had less capacity to provide financing.

Credit sources varied widely among regions. Commercial banks provided 40 percent or more of the financing in Appalachia, the Southeast, and the Corn Belt in 1989, but less than 20 percent in the Pacific and Mountain regions. Seller financing remained widespread in Lake States, Mountain, and Pacific regions—about 40 percent—but was seldom used in the Southeast (8 percent) and the Delta States (13 percent). The Farm Credit System remained an important source in several regions, particularly the Northeast, Southern Plains, and Pacific regions. Insurance companies supplied significantly larger proportions of credit in the Southeast and Delta States in 1989, but much less in the Pacific region.

Table 14.--Credit-financed farmland transfers: Percent of transfers on which debt was incurred, 1975-89 1/

Year	North-east	Lake States	Corn Belt	Northern Plains	Appalachia	South-east	Delta States	Southern Plains	Mountain	Pacific	U.S.
Percent											
1975	87	91	89	88	86	88	83	87	87	86	88
1976	90	88	88	84	84	84	83	81	90	87	87
1977	85	94	91	89	86	85	81	87	88	89	88
1978	90	93	91	90	85	87	85	86	88	89	89
1979	91	95	93	92	87	86	85	87	91	92	90
1980	93	95	93	94	88	86	87	88	93	92	91
1981	89	95	93	93	86	86	85	88	88	91	90
1982	88	94	91	91	83	88	83	85	89	92	89
1983	86	91	85	85	80	82	85	80	84	88	84
1984	84	90	85	85	78	82	82	81	88	89	84
1985	85	87	77	78	81	82	83	81	85	86	82
1986	82	83	72	69	75	74	82	76	78	78	76
1987	76	79	70	64	76	72	76	68	71	75	73
1988	78	78	67	62	72	63	74	68	76	73	70
1989	71	80	65	62	68	56	63	65	64	68	66

1/ Based on reported sales during the 5 months ending March 1, 1975-85 and the 5 months ending February 1, 1986-89.

Table 15.--Credit-financed farmland transfers: Debt as a percent of purchase price, 1975-89 1/

Year	North-east	Lake States	Corn Belt	Northern Plains	Appalachia	South-east	Delta States	Southern Plains	Mountain	Pacific	U.S.
Percent											
1975	76	77	76	78	78	83	74	77	74	74	76
1976	78	78	76	74	78	80	68	75	73	76	76
1977	77	79	77	80	78	80	76	75	75	75	77
1978	76	78	76	81	81	82	80	72	70	73	76
1979	80	81	80	82	81	82	80	78	77	72	79
1980	80	82	79	83	81	79	87	68	75	71	78
1981	78	83	79	81	83	80	80	80	69	73	78
1982	77	82	78	81	78	78	82	76	74	70	77
1983	76	81	76	80	78	79	80	76	69	71	76
1984	80	81	78	76	80	76	87	76	73	73	77
1985	78	81	76	77	78	79	87	79	72	69	76
1986	77	77	73	79	81	83	85	82	72	71	77
1987	76	81	73	74	78	81	81	81	82	72	77
1988	68	77	70	75	75	74	80	79	61	68	72
1989	73	78	73	75	76	64	81	75	76	71	73

1/ Based on reported sales during the 5 months ending March 1, 1975-85 and the 5 months ending February 1, 1986-89.

Table 16.--Credit-financed farmland transfers: Percent of credit volume extended, by type of lender, 1980-89 1/

Regions and type of lender	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Percent										
Northeast:										
Sellers	35	38	38	29	29	32	28	31	27	22
Commercial banks	10	6	6	9	16	17	24	27	36	32
Insurance companies	1	*	*	1	1	*	*	2	*	1
Farm credit system	33	34	35	39	27	23	20	19	24	40
Others	21	22	21	22	27	27	28	20	12	5
Lake States:										
Sellers	55	59	60	44	44	49	53	41	39	38
Commercial banks	1	2	4	4	10	12	16	30	31	37
Insurance companies	3	1	1	1	3	1	1	1	*	*
Farm credit system	28	28	25	38	32	24	17	18	20	20
Others	11	10	10	11	11	15	13	10	10	5
Corn Belt:										
Sellers	34	38	37	37	32	27	30	20	17	20
Commercial banks	3	4	4	10	15	16	38	45	54	44
Insurance companies	8	4	5	5	4	8	3	7	2	7
Farm credit system	42	44	44	37	36	33	16	15	15	25
Others	12	10	10	10	13	16	12	13	12	4
Northern Plains:										
Sellers	41	44	35	32	27	25	49	24	19	24
Commercial banks	2	3	4	4	7	14	20	36	33	30
Insurance companies	4	3	3	2	4	4	10	2	3	4
Farm credit system	36	34	39	42	43	39	14	23	34	33
Others	16	16	19	21	20	19	7	14	11	9
Appalachia:										
Sellers	24	21	27	17	17	26	27	15	18	30
Commercial banks	10	9	12	20	27	25	35	54	47	40
Insurance companies	3	2	2	4	1	1	*	1	1	*
Farm credit system	38	42	38	33	33	25	18	13	21	24
Others	24	26	21	26	24	23	20	16	14	6
Southeast:										
Sellers	25	25	14	17	24	22	24	35	25	8
Commercial banks	4	3	5	19	9	10	16	23	44	48
Insurance companies	7	1	3	1	7	1	2	12	7	18
Farm credit system	47	46	63	50	41	43	34	17	16	22
Others	17	25	15	12	20	23	23	12	9	4
Delta States:										
Sellers	19	20	15	13	19	15	9	19	7	13
Commercial banks	5	6	5	15	14	18	27	22	25	31
Insurance companies	15	3	15	3	3	9	10	3	7	20
Farm credit system	37	47	44	42	38	29	34	12	40	31
Others	24	24	21	26	27	30	19	44	21	5
Southern Plains:										
Sellers	30	43	43	31	23	24	30	15	14	27
Commercial banks	4	7	5	9	13	11	13	23	26	29
Insurance companies	17	6	1	9	3	3	18	9	*	2
Farm credit system	21	29	34	27	37	35	25	24	39	35
Others	28	15	17	25	23	28	14	29	21	7
Mountain:										
Sellers	60	46	56	41	22	50	42	52	33	40
Commercial banks	1	1	1	2	3	3	3	8	6	17
Insurance companies	1	9	5	7	18	1	1	2	7	7
Farm credit system	19	35	27	35	37	29	27	26	35	27
Others	12	9	10	15	20	17	26	11	19	9
Pacific:										
Sellers	54	49	56	52	30	39	31	30	39	40
Commercial banks	2	4	1	2	6	7	9	12	3	10
Insurance companies	3	10	6	1	17	5	1	21	19	2
Farm credit system	29	31	26	31	38	32	49	24	22	35
Others	13	6	11	13	1	17	10	12	18	13
48 States										
Sellers	38	40	41	33	28	33	32	30	24	24
Commercial banks	4	4	4	9	11	13	21	28	32	34
Insurance companies	7	4	4	4	7	3	5	7	5	7
Federal land banks	34	37	37	37	36	31	25	19	25	29
Others	17	15	14	16	18	20	17	16	14	6

* = Less than 0.5 percent

1/ Based on reported sales during the 5 months ending March 1, 1980-85 and the 5 months ending February 1, 1986-89. In 1989, the Farm Credit System includes the Federal Land Banks and Production Credit Associations (PCA's). In preceding years, the PCA's were included in the "Others" group.

Foreign Ownership of U.S. Agricultural Land

The U.S. Department of Agriculture monitors foreign ownership of U.S. agricultural land (farm and forest lands) under the Agricultural Foreign Investment Disclosure Act of 1978. This law requires all foreign owners of U.S. agricultural land to submit reports to the Secretary of Agriculture detailing the number of acres owned and associated information.

As of December 31, 1988, foreign persons reported owning 12.5 million acres of U.S. agricultural land (table 17), with about 99,000 acres bought in 1988. The 12.5 million acres represent slightly less than 1 percent of the 1.3 billion acres of privately-owned U.S. agricultural land and about 0.5 percent of all U.S. land. The volume of foreign-owned U.S. agricultural land has been relatively constant at about 1 percent since 1981.

According to filed reports, nearly half (6 million acres) of the foreign-owned land was forest land. Other principal uses included pasture (3.2 million acres) and cropland (2.1 million). The remaining acres were in other agricultural uses, including vineyards, citrus groves, and orchards (0.6 million acres) and rural land not currently in agricultural production (0.6 million acres).

Corporations owned 10 million acres, partnerships 1.4 million, and individuals 0.9 million. The remaining 0.2 million acres were owned by estates, trusts, associations, and others.

U.S. corporations in which foreign persons have a significant financial interest or substantial control reported owning 60 percent of all the foreign-held acreage. The remaining 40 percent was reported as being held or acquired by foreign persons not affiliated with a U.S. corporation.

Foreign persons from the following countries jointly accounted for about three-fourths of all foreign-owned acreage: United Kingdom (22 percent), Canada (20 percent), France and West Germany (9 percent each), the Netherlands Antilles (5 percent), and the Netherlands and Switzerland (4 percent each) (app. table 3). The Japanese owned slightly less than 2 percent of the foreign-held acreage.

The largest concentration of foreign-owned acres was in Maine where foreign holdings accounted for 10 percent of the State's privately owned agricultural land and 14 percent of all the reported foreign-owned agricultural land nationwide. Three companies owned 91 percent of the foreign-held acres in Maine, all in forest land. Two companies were Canadian and the third was a U.S. corporation which is partially French owned.

Other foreign holdings were concentrated in the South (Appalachia, Southeast, Delta States, and Southern Plains regions) and the West (Mountain and Pacific regions) with 36 and 35 percent, respectively, of all holdings. Rhode Island was the only State with no reported foreign-owned agricultural land.

Foreigners appear to be leaving the land in agriculture. At the time of filing, 93 percent of the acreage was reported as being intended for agricultural use. No change in tenure was reported for 41 percent of the acres, while some change was reported for 27 percent of the acres. No responses regarding tenure change were received for the remaining 32 percent of the acres. [J. Peter DeBraal]

Table 17.-- U.S. agricultural landholdings of foreign owners, by State, December 31, 1988

State	Total land area of State 1/	Privately owned agricultural land 2/	Foreign-owned agricultural land	Proportion of foreign-owned to privately owned agricultural land
		Thousand acres		Percent
Northeast:				
Maine	19,837	18,829	1,799.8	9.6
New Hampshire	5,756	4,682	84.5	1.8
Vermont	5,935	5,251	111.0	2.1
Massachusetts	5,008	3,322	1.7	NEG
Rhode Island	675	439	0	0
Connecticut	3,118	2,267	1.0	NEG
New York	30,321	24,257	348.6	1.4
New Jersey	4,779	2,894	26.6	.9
Pennsylvania	28,728	22,380	74.1	.3
Delaware	1,237	1,064	5.4	.5
Maryland	6,296	5,146	50.9	1.0
Lake States:				
Michigan	36,451	26,117	200.6	.8
Wisconsin	34,833	27,637	21.0	.1
Minnesota	50,911	36,204	296.1	.8
Corn Belt:				
Ohio	26,243	22,979	161.0	.7
Indiana	22,996	20,909	44.0	.2
Illinois	35,613	32,326	116.4	.4
Iowa	35,818	33,912	31.7	.1
Missouri	44,125	40,025	59.2	.1
Northern Plains:				
North Dakota	44,352	39,617	28.8	.1
South Dakota	48,609	38,241	42.9	.1
Nebraska	49,052	45,397	70.6	.2
Kansas	52,338	49,911	60.0	.1
Appalachia:				
Virginia	25,410	21,499	116.1	.5
West Virginia	15,436	13,744	74.2	.5
North Carolina	31,260	27,321	262.8	1.0
Kentucky	25,388	22,915	78.6	.3
Tennessee	26,339	22,901	73.2	.3
Southeast:				
South Carolina	19,330	15,932	212.7	1.3
Georgia	37,156	33,253	578.4	1.7
Florida	34,658	26,529	519.2	2.0
Alabama	32,491	29,467	279.1	0.9
Delta States:				
Mississippi	30,229	26,629	437.7	1.6
Arkansas	33,330	28,834	171.6	.6
Louisiana	28,494	26,463	659.4	2.5
Southern Plains:				
Oklahoma	43,939	38,875	31.1	.1
Texas	167,691	156,768	1,029.9	0.7
Mountain:				
Montana	93,048	54,189	444.5	.8
Idaho	52,744	15,166	18.9	.1
Wyoming	62,073	26,142	99.1	.4
Colorado	66,301	37,527	531.9	1.4
New Mexico	77,654	34,451	557.1	1.6
Arizona	72,645	10,983	270.3	2.5
Utah	52,527	10,779	61.7	.6
Nevada	70,332	7,586	155.5	2.0
Pacific:				
Washington	42,567	23,028	402.2	1.7
Oregon	61,558	25,685	804.5	3.1
California	100,031	47,353	922.9	1.9
Hawaii	4,112	1,992	53.9	2.7
Alaska	365,333	400	.5	.1
50 States	2,265,107	1,290,217	12,484.7	1.0

1/ 1980 land area from Geography Division, Census Bureau. 2/ Privately held land based on T. Frey, unpublished data, Econ. Res. Serv., US Dept. Agr., 1979. Estimate of total land less public, Indian, transportation, and urban land. Includes forest land, pastureland, cropland, range, and miscellaneous.

NEG = Negligible.
NA = Not available.

Farm Real Estate Tax Developments

Taxes levied on U.S. farm real estate (land and buildings) by State and local governments totaled \$4,310.1 million in 1987 (tables 18 and 19). This is an 8-percent increase from 1986 and a 16-percent increase from 1982. The U.S. average tax per acre was \$4.97 in 1987, up from \$4.60 in 1986 and \$4.14 in 1982. The decrease in per acre nominal farmland values between 1982 and 1987 and the increase in average taxes per acre caused the average tax per \$100 of full-market value to rise from \$.49 in 1982 to \$.86 in 1987.

Average taxes per acre were higher in 1987 than in 1986 in 33 States, lower in 14, and unchanged in 3 (table 20). Average taxes per \$100 of full-market value were higher in 35 States, lower in 13, and unchanged in 2 (table 21).

Real estate taxes varied from State to State, and within some regions the variations were quite noticeable. The variations are partly due to the degree that States rely on real estate taxes as sources of local revenue rather than income or sales taxes, and to the extent that the States provide property tax relief for the farming communities.

Sources of Tax Data

The farm real estate taxes described here include all real property taxes levied on farm and ranch lands and buildings by State and local governments, except special assessments such as for drainage and irrigation. The data were obtained from nationwide surveys of approximately 4,000 taxing officials who were asked to provide information on approximately 30,000 farm or ranch parcels. The surveys were conducted by ERS and the National Agricultural Statistics Service (NASS).

The data for 1987 in the accompanying tables are preliminary. The 1987 survey was combined with ERS' Rural Land

Transfer Survey, and the focus shifted from an examination of farmland parcels to rural land parcels. While much rural land is used for farming, there may be some States where significant quantities of rural land are not used for farming and are taxed at rates different from farmland. Consequently, the data changes from 1986 to 1987 may not be consistent with changes in prior or succeeding years. The 1988 survey of farm real estate taxes will return to examining taxes on farmland parcels. The data from that survey and prior years may indicate that adjustments to the 1987 data are necessary.

Final numbers in the farm real estate tax series were last published in 1984, and included data through 1982. 1/ The data contained in this discussion carry the series forward for 1983 through 1987 for total farm real estate taxes, average tax per acre, and taxes per \$100 of full-market value. The index of farm real estate taxes per acre has been discontinued.

Preferential Tax Assessment

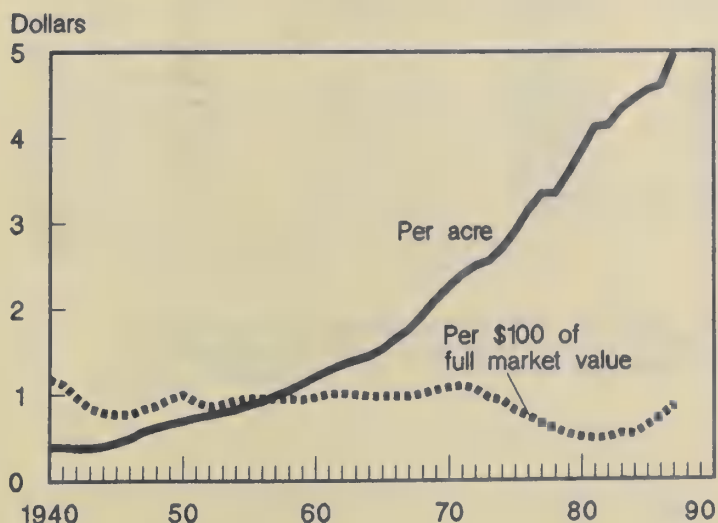
In 1956, Maryland became the first State to provide for preferential tax assessment of farmland—the valuation of farmland for property tax purposes according to its value in its current use rather than at its usually higher market value. Currently 48 States provide for preferential assessment of farmland; Kansas and Nebraska do not. Kansas, however, has a constitutional provision authorizing such assessment, but no adopting legislation has been enacted. The Nebraska program was declared unconstitutional by the Nebraska Supreme Court in 1987. However, a constitutional amendment to provide for such assessment is scheduled for the 1990 ballot in Nebraska.

The preferential assessment laws vary greatly among States but may be grouped into three broad categories: (1) those providing for preferential assessment only; (2) those providing for preferential assessment with deferred (or rollback) taxes that are imposed when the land is taken out of a qualifying use; and (3) those providing for preferential assessment with restrictive agreements that impose a penalty (essentially a deferred tax) when the land is taken out of a qualifying use. 2/ These laws are not necessarily restricted to farmland and may encompass other lands such as open space and forests.

There are two main reasons for adopting these programs. The first is for tax relief for farmers based on the argument that

Figure 10

U.S. Farm Real Estate Taxes



1/ *Farm Real Estate Market Developments: Situation and Outlook*, USDA, ERS, CD-89 (Aug. 1984). Farm real estate taxes previously published for 1983-86 in *Agricultural Statistics* (1985-1988) have been reexamined in light of final data runs and adjustments made where appropriate.

2/ K. Grillo and D. Seid, *State Laws Relating to Preferential Assessment of Farmland*, USDA, ERS, Staff Report No. AGES870326 (June 1987).

the property tax burden falls more heavily on farming than on other sectors of the economy and that the incidence of benefits received by farmers from expenditures derived from the property tax are not equal to those received by other contributors. The second is to preserve open space, particularly on the rural-urban fringe, where pressures are frequently

intense to convert such lands to residential, commercial, or industrial development.

Whether these programs have been successful in preventing or slowing the conversion of farmland or other open spaces to other uses is a matter of some debate. The programs have, however, reduced the property tax rates. [J. Peter DeBraal]

Table 18.--Taxes levied on farm real estate: Total, average tax per acre, and tax per \$100 of full-market value, United States, 1890-1987

Year	Total taxes	Taxes per acre	Tax per \$100 of value	Year	Total taxes	Taxes per acre	Tax per \$100 of value
	Million dollars	Dollars			Million dollars	Dollars	
1890	81.9	0.13	-	1940	401.1	0.39	1.18
1891	84.2	.13	-	1941	406.7	.39	1.12
1892	87.1	.13	-	1942	399.5	.38	.97
1893	91.5	.13	-	1943	400.2	.38	.84
1894	93.3	.13	-	1944	418.9	.40	.79
1895	97.6	.14	-	1945	464.8	.44	.77
1896	96.9	.13	-	1946	518.7	.49	.77
1897	101.0	.13	-	1947	605.4	.57	.83
1898	101.5	.13	-	1948	656.0	.62	.87
1899	105.1	.13	-	1949	706.2	.66	.95
1900	105.6	.13	-	1950	742.4	.69	1.00
1901	110.5	.13	-	1951	776.7	.73	.91
1902	113.1	.14	-	1952	810.4	.76	.86
1903	123.0	.15	-	1953	846.9	.79	.89
1904	125.4	.15	-	1954	878.4	.82	.93
1905	130.3	.15	-	1955	931.2	.88	.96
1906	132.0	.16	-	1956	974.2	.92	.96
1907	140.7	.16	-	1957	1,032.1	.99	.94
1908	150.0	.17	-	1958	1,080.7	1.05	.95
1909	163.2	.19	.48	1959	1,154.7	1.13	.94
1910	165.7	.19	.47	1960 1/	1,243.1	1.21	.97
1911	182.7	.21	.50	1961	1,311.0	1.28	1.01
1912	191.2	.21	.49	1962	1,372.2	1.35	1.01
1913	218.0	.24	.55	1963	1,417.2	1.40	1.00
1914	222.2	.24	.56	1964	1,466.7	1.45	.98
1915	243.0	.26	.57	1965	1,535.7	1.53	.98
1916	260.0	.28	.57	1966	1,633.8	1.65	.98
1917	291.7	.31	.58	1967	1,730.5	1.76	.98
1918	311.3	.33	.57	1968	1,881.8	1.93	1.01
1919	393.1	.41	.59	1969	2,038.8	2.11	1.05
1920	483.0	.51	.79	1970	2,169.1	2.27	1.08
1921	509.7	.54	.94	1971	2,294.1	2.40	1.10
1922	509.1	.54	.96	1972	2,390.5	2.50	1.06
1923	516.4	.55	1.01	1973	2,450.1	2.56	.96
1924	511.4	.55	1.03	1974	2,584.9	2.70	.93
1925	516.8	.56	1.07	1975 2/	2,634.8	2.90	.81
1926	525.6	.56	1.12	1976	2,849.2	3.15	.74
1927	544.7	.57	1.16	1977	3,016.4	3.34	.66
1928	555.6	.58	1.17	1978	3,004.7	3.34	.59
1929	567.5	.58	1.20	1979	3,215.0	3.58	.53
1930	566.8	.57	1.31	1980	3,450.9	3.85	.50
1931	526.1	.53	1.43	1981	3,695.5	4.12	.48
1932	461.2	.45	1.52	1982	3,704.2	4.14	.49
1933	398.4	.39	1.25	1983	3,858.2	4.33	.54
1934	383.8	.37	1.17	1984	3,948.0	4.45	.53
1935	392.3	.37	1.14	1985	4,012.6	4.55	.63
1936	394.4	.38	1.11	1986	4,008.3	4.60	.73
1937	404.8	.39	1.15	1987 3/	4,310.1	4.97	.86
1938	400.4	.38	1.17				
1939	406.8	.39	1.21				

- = Data not available.

1/ Starting with 1960, includes Alaska and Hawaii. 2/ Data for 1975-1979 have been revised from the numbers published in 1981 to reflect the change in the definition of a farm made in the 1974 Census of Agriculture and land value revisions based on the 1978 Census of Agriculture. 3/ Preliminary.

Table 19.--Total taxes levied on farm real estate, by States, selected years, 1940-87

State	1940	1950	1960	1970	1980	1983	1984	1985	1986	1987 1/
Million dollars										
Northeast:										
Maine	3.5	5.4	5.7	6.0	9.5	10.4	10.7	10.6	11.4	11.1
New Hampshire	1.6	2.4	2.3	3.0	5.0	5.9	6.1	6.4	6.8	7.1
Vermont	2.0	3.0	4.0	7.7	12.6	15.1	16.0	15.8	16.8	17.6
Massachusetts	5.2	5.6	6.8	8.7	12.2	10.8	11.2	12.1	12.5	11.2
Rhode Island	.4	.5	.8	1.0	1.8	2.4	2.4	2.6	2.7	2.5
Connecticut	2.8	4.0	5.0	7.4	7.7	9.1	9.1	9.5	9.6	8.5
New York	18.8	27.0	41.3	49.5	117.7	148.6	149.5	146.0	146.3	128.1
New Jersey	4.3	6.5	12.1	15.8	18.9	22.6	22.9	23.1	23.5	24.7
Pennsylvania	14.4	19.3	27.6	39.8	67.3	83.6	87.9	92.9	96.5	96.7
Delaware	.3	.5	.8	1.5	1.2	1.3	1.3	1.3	1.4	1.2
Maryland	3.4	4.8	7.9	14.2	17.7	20.6	21.5	21.4	21.2	21.0
Lake States:										
Michigan	8.3	13.7	34.1	55.4	174.6	231.1	237.5	242.0	239.0	285.8
Wisconsin	17.8	36.5	52.1	85.2	213.1	254.0	263.7	261.8	257.0	270.0
Minnesota	21.6	42.7	64.3	109.7	128.3	176.9	179.9	167.9	153.3	167.5
Corn Belt:										
Ohio	15.0	22.6	40.3	73.4	127.1	127.9	129.5	132.6	135.5	143.0
Indiana	15.1	26.6	44.7	95.2	122.9	141.1	147.0	154.2	160.5	153.5
Illinois	30.4	64.2	121.8	210.8	375.0	389.0	382.4	375.0	373.2	481.2
Iowa	34.0	65.7	103.4	196.7	312.2	290.9	304.9	311.8	320.0	349.3
Missouri	11.0	18.2	35.7	59.4	86.5	78.0	74.7	79.9	81.9	81.0
Northern Plains:										
North Dakota	8.4	17.0	25.7	47.6	80.4	88.1	94.5	95.3	96.5	85.6
South Dakota	9.6	17.9	26.9	49.0	98.3	104.5	108.7	107.8	109.7	106.3
Nebraska	14.3	29.6	51.6	90.6	224.0	266.9	282.1	292.7	283.4	309.3
Kansas	17.6	34.8	57.8	97.3	126.9	150.0	149.2	161.0	166.5	160.1
Appalachia:										
Virginia	4.4	7.2	10.7	16.5	34.8	40.7	42.0	42.8	44.9	46.0
West Virginia	1.4	1.9	1.8	2.4	2.7	3.1	2.9	2.8	2.9	3.0
North Carolina	6.9	9.9	15.6	22.3	42.1	47.2	48.7	50.0	51.5	54.5
Kentucky	6.5	12.2	12.5	22.3	29.4	30.0	31.0	31.1	31.7	33.5
Tennessee	7.1	8.7	10.4	23.5	41.1	45.5	46.9	48.9	49.3	50.0
Southeast:										
South Carolina	3.4	4.5	6.3	8.3	12.2	13.1	12.7	13.1	14.1	13.3
Georgia	3.4	8.3	8.3	21.4	50.5	57.1	57.5	59.3	60.1	60.9
Florida	2.6	8.7	21.4	40.9	78.3	82.9	82.1	85.3	92.0	100.9
Alabama	3.9	5.3	4.9	6.7	10.1	12.2	12.0	12.1	11.7	11.8
Delta States:										
Mississippi	6.6	7.6	7.7	16.3	21.4	22.2	25.0	25.7	24.9	24.6
Arkansas	5.1	6.0	11.9	20.9	30.6	33.6	33.9	37.1	36.0	37.3
Louisiana	3.1	4.4	6.9	12.1	15.9	19.6	20.0	20.6	21.6	20.4
Southern Plains:										
Oklahoma	8.4	12.6	17.6	32.7	49.5	53.8	53.9	54.7	55.1	62.1
Texas	19.0	37.2	66.4	123.8	191.1	221.7	226.2	231.2	240.0	302.4
Mountain:										
Montana	5.2	10.6	16.6	33.2	60.6	57.5	57.3	60.6	59.7	60.0
Idaho	4.7	9.9	15.8	18.9	32.9	36.2	36.3	37.7	38.6	41.1
Wyoming	1.6	3.7	4.8	9.4	15.6	18.1	17.7	17.7	17.2	17.6
Colorado	6.2	12.1	21.4	30.7	43.3	53.0	60.5	61.5	58.0	58.5
New Mexico	1.3	2.8	4.5	7.9	7.1	6.5	6.4	6.6	7.0	9.3
Arizona	1.7	4.5	6.1	15.9	21.9	24.4	24.3	25.2	27.0	34.3
Utah	2.2	4.3	6.1	9.2	12.8	14.8	14.4	13.6	13.6	11.1
Nevada	.6	1.0	1.9	3.1	3.8	3.1	3.3	3.3	3.4	3.4
Pacific:										
Washington	4.9	9.9	20.3	32.3	47.6	52.5	55.3	57.2	58.4	63.5
Oregon	5.9	15.4	30.9	32.5	52.7	60.4	63.1	65.3	67.6	73.0
California	5.2	65.2	136.6	277.2	194.2	198.2	199.4	203.7	175.4	173.8
Hawaii	-	-	2.9	3.5	7.3	21.7	22.0	21.2	20.9	21.2
Alaska	-	-	.1	.3	.5	.4	.4	.4	.4	.4
50 States	401.1	742.2	1,243.1	2,169.1	3,450.9	3,858.2	3,948.0	4,012.6	4,008.3	4,310.1

- = Data not available. 1/ Preliminary.

Table 20.--Taxes levied on farm real estate: Average tax per acre, by States, and selected years, 1940-87

State	1940	1950	1960	1970	1980	1983	1984	1985	1986	1987	1/
Dollars											
Northeast:											
Maine	0.84	1.29	1.94	3.44	6.16	7.08	7.28	7.42	7.98	7.77	
New Hampshire	.88	1.39	2.13	4.95	9.51	11.48	11.75	12.41	13.59	14.26	
Vermont	.54	.86	1.42	4.04	7.83	9.70	10.28	10.78	11.44	11.99	
Massachusetts	2.70	3.41	6.38	12.83	21.44	21.06	21.57	23.17	23.95	21.51	
Rhode Island	1.70	2.46	6.10	14.87	30.78	39.59	40.85	43.05	44.54	41.93	
Connecticut	1.86	3.20	5.91	13.99	19.51	22.53	23.37	24.46	26.47	23.85	
New York	1.10	1.69	3.13	4.91	13.73	17.15	17.43	17.59	18.44	16.34	
New Jersey	2.31	3.78	9.23	15.56	20.35	24.64	25.45	26.54	28.15	31.36	
Pennsylvania	.98	1.38	2.39	4.51	8.86	11.37	11.96	12.64	13.44	13.47	
Delaware	.33	.58	1.07	2.23	2.11	2.10	2.20	2.31	2.45	2.15	
Maryland	.81	1.18	2.32	5.12	6.79	8.02	8.39	8.69	8.95	9.03	
Lake States:											
Michigan	.46	.80	2.36	4.67	17.55	23.03	23.66	24.11	24.02	28.72	
Wisconsin	.78	1.57	2.50	4.72	12.58	15.32	16.08	16.24	16.03	16.84	
Minnesota	.66	1.30	2.09	3.81	4.66	6.34	6.45	6.02	5.56	6.08	
Corn Belt:											
Ohio	.69	1.08	2.21	4.31	8.35	8.51	8.67	8.88	9.07	9.70	
Indiana	.76	1.36	2.42	5.43	7.43	8.53	9.00	9.44	9.83	9.52	
Illinois	.98	2.08	4.03	7.07	13.02	13.55	13.32	13.06	13.00	16.82	
Iowa	1.00	1.92	3.06	5.87	9.85	8.84	9.29	9.50	9.75	10.68	
Missouri	.32	.52	1.09	1.84	2.92	2.64	2.55	2.74	2.82	2.80	
Northern Plains:											
North Dakota	.22	.43	.65	1.18	2.00	2.19	2.35	2.38	2.42	2.15	
South Dakota	.28	.46	.69	1.27	2.54	2.73	2.84	2.82	2.87	2.79	
Nebraska	.30	.64	1.11	2.04	5.03	6.01	6.39	6.62	6.41	7.00	
Kansas	.36	.72	1.16	1.98	2.69	3.16	3.17	3.42	3.54	3.40	
Appalachia:											
Virginia	.27	.46	.83	1.56	3.83	4.48	4.68	4.81	5.05	5.17	
West Virginia	.16	.23	.31	.55	.78	.92	.92	.92	.94	.98	
North Carolina	.37	.51	1.00	1.76	3.83	4.57	4.71	4.93	5.08	5.36	
Kentucky	.32	.63	.74	1.40	2.10	2.16	2.23	2.24	2.28	2.41	
Tennessee	.38	.46	.66	1.57	3.25	3.66	3.77	3.93	4.09	4.25	
Southeast:											
South Carolina	.30	.38	.71	1.19	2.12	2.46	2.47	2.60	2.84	2.80	
Georgia	.14	.32	.43	1.36	3.46	4.07	4.15	4.29	4.41	4.57	
Florida	.32	.54	1.42	2.98	6.21	6.83	6.77	7.02	7.57	8.31	
Alabama	.20	.25	.30	.49	.90	1.14	1.13	1.14	1.15	1.16	
Delta States:											
Mississippi	.34	.37	.42	1.03	1.61	1.71	1.95	2.01	1.97	1.97	
Arkansas	.28	.32	.73	1.35	2.14	2.37	2.41	2.65	2.64	2.79	
Louisiana	.31	.40	.67	1.25	1.79	2.21	2.25	2.33	2.47	2.40	
Southern Plains:											
Oklahoma	.24	.36	.51	.94	1.58	1.73	1.76	1.79	1.80	2.03	
Texas	.14	.26	.47	.89	1.47	1.72	1.75	1.81	1.90	2.41	
Mountain:											
Montana	.11	.21	.31	.64	1.20	1.15	1.15	1.22	1.20	1.21	
Idaho	.45	.85	1.21	1.60	2.80	3.14	3.19	3.35	3.51	3.84	
Wyoming	.06	.14	.19	.37	.63	.72	.71	.71	.69	.71	
Colorado	.20	.35	.59	.95	1.40	1.77	2.03	2.07	1.97	2.00	
New Mexico	.04	.09	.15	.25	.22	.20	.20	.21	.23	.30	
Arizona	.13	.36	.59	1.50	2.13	2.37	2.36	2.46	2.65	3.38	
Utah	.30	.47	.59	1.10	1.71	2.04	2.01	2.02	2.06	1.69	
Nevada	.15	.17	.26	.52	.63	.52	.55	.56	.57	.57	
Pacific:											
Washington	.32	.62	1.15	2.26	3.57	3.91	4.17	4.32	4.43	4.82	
Oregon	.33	.80	1.54	1.98	3.24	3.67	3.83	3.97	4.13	4.46	
California	.83	1.87	3.95	8.87	7.16	7.39	7.48	7.66	7.85	7.83	
Hawaii	-	-	1.22	1.71	3.46	11.07	11.26	10.89	10.70	10.88	
Alaska	-	-	1.81	3.56	5.45	4.49	4.58	4.67	4.76	4.76	
50 States	.39	.69	1.21	2.27	3.85	4.33	4.45	4.55	4.60	4.97	

- = Data not available. 1/ Preliminary.

Table 21.--Taxes levied on farm real estate: Amount per \$100 of full-market value, by States, and selected years, 1940-87

State	1940	1950	1960	1970	1980	1983	1984	1985	1986	1987 1/
Dollars										
Northeast:										
Maine	2.87	2.38	2.30	2.14	1.06	1.00	.97	.87	.80	.72
New Hampshire	2.41	1.90	2.04	2.07	.96	.98	1.05	.87	.83	.80
Vermont	1.76	1.55	1.76	1.81	1.10	1.15	1.15	1.06	.97	.93
Massachusetts	2.41	1.80	2.03	2.27	1.38	1.07	1.04	.98	.87	.72
Rhode Island	1.38	1.06	1.61	2.03	1.21	1.43	1.40	1.29	1.15	.99
Connecticut	1.30	1.29	1.33	1.52	.81	.85	.83	.76	.71	.59
New York	1.99	1.84	2.16	1.80	1.94	2.10	2.07	2.18	2.24	1.75
New Jersey	1.70	1.29	1.75	1.42	.70	.78	.79	.75	.72	.59
Pennsylvania	1.65	1.28	1.27	1.21	.23	.75	.73	.84	.93	.78
Delaware	.51	.51	.44	.45	.12	.11	.12	.13	.14	.12
Maryland	1.20	.95	.80	.80	.30	.38	.38	.41	.47	.49
Lake States:										
Michigan	.90	.81	1.21	1.43	1.62	1.88	1.93	2.29	2.57	3.45
Wisconsin	1.54	1.78	1.88	2.03	1.28	1.38	1.54	1.92	2.26	2.69
Minnesota	1.49	1.54	1.35	1.69	.44	.54	.60	.73	.91	1.23
Corn Belt:										
Ohio	1.01	.79	.89	1.08	.50	.57	.60	.79	.90	1.03
Indiana	1.18	.99	.92	1.34	.41	.53	.56	.75	.93	1.02
Illinois	1.18	1.99	1.28	1.44	.65	.74	.74	.79	1.14	1.62
Iowa	1.26	1.20	1.19	1.50	.54	.52	.62	.89	1.16	1.43
Missouri	.98	.82	.95	.82	.33	.31	.30	.42	.47	.51
Northern Plains:										
North Dakota	1.70	1.45	1.18	1.21	.48	.48	.52	.64	.74	.76
South Dakota	1.98	1.32	1.22	1.38	.84	.69	.75	1.01	1.21	1.41
Nebraska	1.35	1.09	1.22	1.31	.82	.84	1.02	1.46	1.72	2.04
Kansas	1.23	1.09	1.23	1.25	.47	.53	.54	.73	.91	1.00
Appalachia:										
Virginia	.65	.56	.60	.54	.38	.40	.42	.44	.44	.47
West Virginia	.50	.38	.41	.41	.11	.13	.14	.17	.17	.19
North Carolina	.95	.52	.54	.53	.32	.35	.34	.40	.45	.49
Kentucky	.84	.78	.54	.55	.22	.21	.22	.25	.26	.30
Tennessee	1.03	.61	.50	.59	.34	.36	.36	.40	.41	.42
Southeast:										
South Carolina	.94	.55	.52	.46	.24	.26	.27	.29	.33	.35
Georgia	.66	.75	.43	.58	.40	.44	.46	.50	.54	.54
Florida	.82	.94	.66	.84	.46	.43	.42	.46	.43	.57
Alabama	.93	.52	.33	.25	.11	.14	.14	.15	.15	.16
Delta States:										
Mississippi	1.32	.67	.40	.44	.20	.19	.21	.24	.26	.30
Arkansas	1.07	.53	.64	.52	.23	.24	.26	.31	.38	.44
Louisiana	.86	.48	.39	.39	.14	.16	.17	.19	.19	.33
Southern Plains:										
Oklahoma	.98	.69	.58	.54	.26	.25	.25	.32	.38	.47
Texas	.71	.56	.55	.59	.33	.32	.29	.28	.35	.50
Mountain:										
Montana	1.42	1.14	.82	1.03	.51	.41	.40	.51	.56	.68
Idaho	1.34	1.09	.96	.81	.37	.33	.34	.39	.47	.59
Wyoming	.94	.91	.72	.80	.35	.30	.29	.32	.37	.38
Colorado	1.53	1.02	1.06	.96	.36	.38	.42	.46	.53	.54
New Mexico	.70	.44	.48	.53	.10	.10	.10	.12	.16	.23
Arizona	1.11	.94	.55	1.00	.31	.35	.35	.43	.60	.70
Utah	1.31	.93	.86	1.00	.24	.27	.26	.29	.32	.28
Nevada	1.14	.88	.66	.79	.18	.17	.18	.21	.26	.24
Pacific:										
Washington	.80	.68	.84	.91	.43	.37	.38	.41	.49	.60
Oregon	1.15	1.27	1.68	1.24	.54	.48	.51	.64	.74	.87
California	1.15	1.16	1.04	1.76	.48	.37	.38	.43	.48	.56
Hawaii	-	-	.72	.58	.32	.73	.72	.73	.72	.68
Alaska	-	-	1.02	1.83	.76	.49	.49	.49	.49	.49
50 States	1.18	1.00	.97	1.08	.50	.54	.53	.63	.73	.86

- = Data not available. 1/ Preliminary.

Appendix table 1.--Farm buildings: Total value of farm buildings, by State, 1982-89 1/

State	As of April 1				As of February 1			
	1982	1983	1984	1985	1986	1987	1988	1989
Million dollars								
Northeast:	10,315	10,047	10,425	10,010	9,872	11,020	11,683	13,050
Maine	378	385	404	444	510	550	614	651
New Hampshire	190	194	206	230	255	275	309	327
Vermont	432	442	463	492	565	610	623	660
Massachusetts	493	496	529	597	685	739	853	914
Rhode Island	48	48	49	55	63	68	99	105
Connecticut	396	407	410	463	498	526	630	668
New York	2,477	2,440	2,462	2,266	2,187	2,419	2,430	2,550
New Jersey	741	710	702	734	790	982	1,104	1,279
Pennsylvania	3,628	3,567	3,814	3,473	3,225	3,799	3,920	4,695
Delaware	214	213	219	188	196	190	191	221
Maryland	1,319	1,145	1,167	1,068	915	861	900	980
Lake States:	15,020	13,995	13,096	10,338	8,290	7,062	7,333	7,631
Michigan	3,227	3,057	3,027	2,578	2,251	1,983	1,992	2,032
Wisconsin	5,995	5,680	5,228	4,120	3,407	2,968	2,957	3,073
Minnesota	5,799	5,258	4,841	3,640	2,632	2,110	2,384	2,526
Corn Belt:	23,867	21,269	20,033	14,878	12,655	11,251	12,085	13,144
Ohio	4,113	3,736	3,528	2,724	2,427	2,206	2,297	2,410
Indiana	4,040	3,527	3,415	2,670	2,221	1,911	2,022	2,162
Illinois	4,666	4,195	4,070	2,941	2,533	2,274	2,410	2,624
Iowa	6,801	6,002	5,273	3,706	2,898	2,546	2,998	3,472
Missouri	4,248	3,809	3,747	2,837	2,576	2,313	2,359	2,475
Northern Plains:	9,430	9,020	8,447	6,439	5,371	4,687	4,949	5,305
North Dakota	1,883	1,799	1,781	1,442	1,250	1,096	1,123	1,145
South Dakota	1,690	1,668	1,602	1,174	1,000	818	846	913
Nebraska	2,855	2,708	2,349	1,674	1,359	1,238	1,337	1,522
Kansas	3,003	2,845	2,715	2,148	1,762	1,535	1,644	1,725
Appalachia:	12,430	12,187	12,080	10,923	10,514	10,001	10,108	10,569
Virginia	2,295	2,332	2,262	2,171	2,257	2,168	2,207	2,469
West Virginia	756	662	604	470	464	450	446	464
North Carolina	3,005	2,987	3,105	2,717	2,448	2,351	2,192	2,300
Kentucky	3,233	3,173	3,016	2,686	2,553	2,300	2,262	2,307
Tennessee	3,141	3,032	3,092	2,878	2,792	2,733	3,000	3,029
Southeast:	6,948	6,660	6,459	6,077	5,670	5,496	5,709	6,034
South Carolina	1,043	964	903	851	802	696	774	835
Georgia	2,046	1,988	1,901	1,788	1,657	1,651	1,670	1,802
Florida	1,813	1,849	1,867	1,756	1,634	1,650	1,781	1,869
Alabama	2,047	1,859	1,788	1,682	1,577	1,499	1,484	1,528
Delta States:	6,157	5,527	5,451	4,879	4,032	3,296	3,189	3,245
Mississippi	2,049	1,823	1,882	1,646	1,456	1,236	1,205	1,229
Arkansas	2,454	2,154	2,035	1,821	1,469	1,284	1,259	1,283
Louisiana	1,654	1,549	1,534	1,411	1,107	776	726	733
Southern Plains:	9,332	9,189	9,628	9,657	7,908	6,936	6,625	6,440
Oklahoma	2,809	2,681	2,615	2,096	1,764	1,554	1,513	1,632
Texas	6,523	6,508	7,013	7,561	6,144	5,382	5,112	4,808
Mountain:	8,496	8,099	8,103	7,166	6,088	5,640	5,460	5,496
Montana	1,388	1,309	1,318	1,095	995	807	779	787
Idaho	1,654	1,589	1,552	1,394	1,163	984	1,010	1,050
Wyoming	629	623	625	556	479	465	427	411
Colorado	1,774	1,748	1,772	1,622	1,309	1,314	1,291	1,279
New Mexico	879	794	799	698	561	506	546	579
Arizona	899	852	860	765	654	676	584	572
Utah	985	919	913	799	723	674	630	623
Nevada	288	264	264	236	203	213	193	196
Pacific:	11,543	11,465	11,330	10,074	8,951	7,800	7,514	7,769
Washington	2,475	2,464	2,482	2,360	2,043	1,800	1,722	1,773
Oregon	2,226	2,204	2,160	1,774	1,572	1,432	1,369	1,355
California	6,842	6,796	6,688	5,940	5,336	4,568	4,422	4,641
48 States	113,540	107,458	105,049	90,442	79,352	73,187	74,654	78,683

1/ Current dollars. Values are estimated by multiplying a building-value factor for each State times the respective total value of farmland and buildings. The factors are based on building values as proportions of total value of land and buildings, as reported in the Bureau of Census' 1979 Farm Finance Survey, Special Report AC78-SR-6, July 1982. The factors are slightly reduced from year to year.

Appendix table 2.--Average per farm value of farmland and buildings, by State, 1982-89 1/

State	As of April 1				As of February 1			
	1982	1983	1984	1985	1986	1987	1988	1989
Dollars								
Northeast:	224,400	219,000	235,000	232,889	237,459	271,999	294,062	333,339
Maine	136,000	136,400	146,300	166,810	193,500	210,915	237,737	254,379
New Hampshire	180,400	186,500	199,500	225,371	267,482	291,555	321,000	343,470
Vermont	184,700	190,900	207,800	232,457	265,852	289,779	299,234	320,181
Massachusetts	212,000	215,600	232,000	268,827	311,839	339,904	393,977	421,556
Rhode Island	255,800	258,800	284,800	324,607	376,544	410,433	598,998	640,928
Connecticut	297,400	308,700	329,500	384,960	440,678	482,358	584,329	625,232
New York	162,500	158,400	168,300	167,109	170,719	197,758	203,185	215,377
New Jersey	341,500	330,500	344,700	380,862	429,448	595,150	694,140	812,144
Pennsylvania	221,900	224,100	246,200	226,500	218,081	259,517	272,850	330,149
Delaware	337,000	339,700	342,000	304,943	351,388	354,902	372,648	435,998
Maryland	363,000	318,100	331,400	311,554	277,554	271,828	295,823	325,405
Lake States:	289,500	274,100	262,800	215,784	176,054	152,531	160,382	169,028
Michigan	227,600	217,800	221,300	193,432	176,333	162,348	164,725	169,666
Wisconsin	235,200	230,200	219,000	180,625	152,708	136,042	135,203	141,963
Minnesota	375,400	347,200	326,100	260,617	196,458	160,861	179,668	192,245
Corn Belt:	401,500	367,000	357,900	272,573	237,938	220,120	240,996	266,076
Ohio	280,300	259,900	253,500	199,897	181,951	175,029	184,060	195,104
Indiana	356,600	318,200	318,800	258,095	225,247	209,397	223,811	241,715
Illinois	588,300	527,200	549,700	419,020	381,503	354,195	383,734	422,108
Iowa	544,100	493,500	445,600	322,076	259,108	234,218	278,532	325,882
Missouri	249,900	226,300	226,800	176,497	161,850	148,092	153,883	163,116
Northern Plains:	466,800	454,800	436,400	343,294	296,799	265,028	287,724	312,553
North Dakota	504,200	493,100	507,000	433,059	390,720	351,356	363,596	374,504
South Dakota	414,100	418,500	406,000	304,795	265,764	225,867	239,351	260,893
Nebraska	550,400	535,900	485,300	355,200	301,484	282,318	313,518	360,546
Kansas	404,400	387,000	378,100	310,667	264,668	232,908	255,611	270,948
Appalachia:	157,000	157,600	160,900	149,505	149,549	144,022	149,212	157,687
Virginia	179,000	190,100	192,900	193,956	219,946	213,347	223,928	253,038
West Virginia	139,400	120,700	115,300	94,971	94,681	92,788	95,127	99,883
North Carolina	167,400	174,100	192,100	176,495	167,211	164,447	159,316	168,875
Kentucky	148,900	147,700	144,600	131,370	127,289	115,924	115,182	118,638
Tennessee	146,700	143,000	144,300	134,273	134,309	132,780	150,376	153,384
Southeast:	268,700	271,300	275,700	265,786	257,064	260,508	271,527	289,736
South Carolina	189,700	189,200	185,400	179,800	174,406	158,709	174,850	190,587
Georgia	227,400	231,400	241,400	233,550	223,046	229,234	229,406	250,053
Florida	497,100	512,200	522,400	509,000	478,460	488,029	518,748	549,873
Alabama	189,900	177,400	172,400	163,769	164,204	164,070	164,119	170,684
Delta States:	314,600	293,900	297,900	277,687	239,639	199,263	202,237	207,766
Mississippi	268,400	250,700	266,600	245,281	228,717	200,500	206,581	212,779
Arkansas	311,500	281,200	273,200	256,302	221,266	199,321	205,806	211,980
Louisiana	384,600	373,800	379,000	352,378	279,111	197,639	192,106	195,948
Southern Plains:	376,400	376,700	400,700	431,548	379,364	340,362	335,317	327,195
Oklahoma	332,700	320,800	316,000	263,070	223,610	201,856	201,341	219,462
Texas	393,400	398,500	433,800	499,130	447,626	400,959	394,575	374,847
Mountain:	675,000	635,300	643,600	576,353	501,924	475,385	465,665	472,760
Montana	694,400	661,500	675,400	568,992	527,043	437,021	426,267	434,793
Idaho	506,100	495,000	486,400	441,484	381,116	340,106	360,296	378,311
Wyoming	742,300	734,200	752,800	684,400	608,960	603,641	560,541	543,725
Colorado	577,300	585,200	599,200	560,449	458,614	458,161	449,712	449,712
New Mexico	640,700	584,900	594,000	531,522	438,326	401,831	438,681	469,389
Arizona	1,415,600	1,321,600	1,331,800	1,169,118	997,263	1,066,294	963,978	954,338
Utah	509,100	480,000	481,400	428,950	397,768	377,319	363,915	363,915
Nevada	822,500	820,800	859,600	806,080	730,510	774,341	707,360	728,581
Pacific:	577,700	588,900	596,900	532,907	479,561	422,905	413,329	433,402
Washington	387,700	400,200	407,200	391,061	341,996	304,376	294,149	305,915
Oregon	343,000	338,400	339,500	281,676	252,100	231,932	227,062	227,062
California	773,900	796,000	811,500	718,803	652,263	571,240	558,553	592,067
48 States	352,000	340,300	341,800	302,361	270,808	251,695	260,498	275,726

1/ Current dollars. Average per farm value is estimated by dividing total value of farmland and buildings for each State by the State's number of farms.

Appendix table 3.--U.S. agricultural landholdings by country of foreign owner, December 31, 1988

Country	Acres	Country	Acres
Argentina	13,256	Thailand	240
Australia	3,558	Trinidad & Tobago	131
Austria	55,989	Turkey	558
Bahamas	32,176	Turks Islands	3,192
Bahrain	553	United Arab Emirates	2,750
Belgium	62,871	United Kingdom	289,402
Belize	1,400	Uruguay	11,497
Bermuda	73,436	U.S.S.R.	835
Bolivia	11	Venezuela	25,294
Brazil	1,621	Vietnam	152
British Virgin Islands	32,461	Yugoslavia	1,024
Canada	1,414,162	Multiple 1/	51,054
Cayman Islands	24,228	Third tier 2/	212,661
Chile	436	Subtotal 3/	5,051,849
China	485		
Colombia	8,057	US/Andorra	3,741
Costa Rica	15,579	US/Argentina	4,140
Cuba	20	US/Australia	1,283
Czechoslovakia	485	US/Austria	15,585
Denmark	9,226	US/Bahamas	67,526
Dominican Republic	2,129	US/Barbados	41
Ecuador	1,050	US/Belgium	66,370
Egypt	1,747	US/Bermuda	38,684
El Salvador	235	Brazil	10,401
France	83,982	US/British Virgin Islands	2,285
Gambia	294	US/Canada	1,084,015
Germany (West)	720,192	US/Cayman Islands	10,744
Greece	57,227	US/Chile	9,929
Guatemala	844	US/China	322
Guyana	35	US/Colombia	7,574
Honduras	892	US/Denmark	2,004
Hong Kong	18,318	US/Ecuador	1,549
Hungary	110	US/Egypt	1,963
India	1,688	US/El Salvador	12
Indonesia	824	US/Finland	3,047
Iran	3,961	US/France	1,051,679
Iraq	1,140	US/Germany (West)	410,505
Ireland	11,090	US/Greece	6,916
Israel	991	US/Guatemala	412
Italy	82,418	US/Guyana	334
Ivory Coast	119	US/Honduras	37
Jamaica	1,621	US/Hong Kong	6,056
Japan	146,604	US/Iran	2,302
Jordan	2,304	US/Iraq	960
Kenya	32	US/Ireland	2,918
Korea (South)	585	US/Italy	9,667
Kuwait	1,568	US/Japan	71,131
Laos	31	US/Korea (South)	75
Lebanon	13,793	US/Kuwait	7,628
Liberia	33,237	US/Lebanon	703
Libyan Arab Republic	302	US/Liberia	29,945
Liechtenstein	177,624	US/Libyan Arab Republic	280
Luxembourg	6,485	US/Liechtenstein	169,363
Malaysia	2,809	US/Luxembourg	232,911
Mexico	238,340	US/Malaysia	300
Montserrat	145	US/Mexico	89,588
Morocco	17,035	US/Netherlands	380,321
Namibia	146	US/Netherlands Antilles	231,648
Netherlands	130,341	US/New Hebrides	2,991
Netherlands Antilles	447,711	US/New Zealand	594
New Zealand	350	US/Nicaragua	282
Nicaragua	1,348	US/Norway	352
Nigeria	14	US/Panama	75,144
Norway	5,506	US/Philippines	2,079
Oman	454	US/Portugal	1,683
Pakistan	2,171	US/Saudi Arabia	19,923
Panama	200,286	US/South Africa	3,309
Peru	291	US/Spain	4,120
Philippines	3,233	US/Sweden	3,424
Poland	147	US/Switzerland	267,683
Portugal	816	US/Taiwan	9,943
St. Vincent	2,637	US/Thailand	252
Saudi Arabia	35,387	US/Trinidad & Tobago	20
Singapore	1,048	US/Turkey	443
South Africa	1,698	US/United Arab Emirates	1,705
Southern Rhodesia	230	US/United Kingdom	2,490,484
Spain	1,798	US/Uruguay	618
Sweden	6,518	US/Venezuela	38,376
Switzerland	207,762	US/Multiple	178,904
Syria	4,847	US/Third Tier	292,666
Taiwan	6,366	SUBTOTAL 4/	7,432,889
Tanzania	10,143		
		TOTAL ALL LANDHOLDINGS	12,484,738

1/ A report is processed as "multiple" when no single country predominates--for example, an equal partnership between a Canadian and a West German. 2/ A report is processed as "third tier" if three or more levels of ownership are reported with no foreign interest indicated. 3/ Total interest excluding U.S. corporations with foreign shareholders. 4/ Total interest of U.S. corporations with foreign shareholders.

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Transactor Characteristics and Rural Land Prices

Hyunok Lee*

Abstract: Farmland price variations among parcels can be explained, in part, by the characteristics of sellers and buyers and land operation. Farmland operated by nonowners is negatively related to prices. Higher prices are correlated with buyers' nonfarm jobs and sellers' off-farm/nonfarm jobs. Another important price determinant is future land use expected by the buyer with a positive correlation with nonagricultural future use.

Keywords: Rural land transaction prices, transactor characteristics, price index.

No two land transactions involve land of equal quality. Quality depends on location, productivity, and improvements, each of which influences buyers' and sellers' assessments of value. Thus, per acre prices vary across transactions. Such heterogeneity of land characteristics is not, however, the only source of price diversity. Heterogeneity of buyers' and sellers' own characteristics also causes land price differences.

Characteristics of buyers, sellers, and farmland operators play an important role in determining the market price of land.^{1/} Farmland operated by nonowners is negatively related to farmland prices. Also, when sellers hold off-farm/nonfarm jobs or buyers hold nonfarm jobs, farmland prices tend to be higher. Furthermore, future nonagricultural use of farmland (expected by the buyer) considerably elevates farmland prices.

Even casual observers recognize that prices vary across transactions involving differing sets of selling and buying parties. This variability is viewed as a common market phenomenon. This paper investigates whether there are measurable relations among transactor characteristics and price variability. A land transaction model postulating such relations was developed and estimated using actual survey data.^{2/}

Farmland prices depend on a complex interaction of factors—land quality, land market competitiveness, and urban proximity, as well as transactor characteristics highlighted here. While this analysis allows land quality adjustment using the Peterson quality index, further research incorporating other factors is needed.^{3/} Before analytical results are reported, it is useful to investigate how individual factors bring about price disparities.

Knowledge Is Imperfect and Expectations Differ

No potential buyers and sellers possess perfect knowledge about land markets. Buyers and sellers do not know all aspects of the actual quality of a specific tract of land. In the absence of perfect knowledge, some may rely on their

unique knowledge, or some may delay transactions to acquire more information. The costs of acquiring information or the value of information also vary across individuals. Such diversities across potential transactors, in the presence of a relatively thin land market, become important sources for price variations.

Even if a buyer or seller has perfect information about current land market conditions, perfect knowledge could not be claimed. Potential transactors have to cope with the uncertainty of the future as well. Total earnings from land include the future stream of income and possible capital gains, both of which are largely influenced by future economic conditions. Thus, today's estimates on future earnings critically depend on individuals' expectations on the future farm economy.

Such uncertainties suggest that individuals may develop different prices that they are willing to accept. For a contract to occur, a willing buyer must be matched with a willing seller. In this matching process, there may be a relation between transaction prices and buyer and seller characteristics. The following attempts to specify those relations.

Classifications of Land by Characteristics Categories

Information from a land transfer survey taken by USDA in 1987 is used to portray relations between prices and transactor characteristics.^{4/} This report focuses on commercial, arm's length transactions by excluding land transfers between relatives. The original survey reports the information on land use prior to sale, current use, and anticipated use (5 years from the sale date). To concentrate on rural land transfers, only transactions involving land currently used for agricultural purposes were included.^{5/}

Per acre land prices are considered in relation to: land use prior to sale, expected future use (anticipated by the buyer), ownership status of buyers and sellers, operator status, and buyer and seller occupations.

Table 1. Indices measuring the price effects of transactor characteristics

Land use			
	Previous		Expected
Agricultural land without residence*	1.00		1.00
Nonagricultural land without residence	.81		2.17
Agricultural land with residence	1.03		1.94
Nonagricultural land with residence	1.85		2.12
Ownership			
	Seller		Buyer
Family ownership*	1.00		1.00
Nonfamily ownership	.88		1.21
Operator status			
	Seller		Buyer
Owner operator*	1.00		1.00
Hired manager operator	.94		.83
Tenant operator	.64		.93
Other types of operator	.73		1.37
Land was idle	.65		1.19
Occupation			
	Seller		Buyer
Active farmer*	1.00	Farm related*	1.00
Retired farmer (or going to quit)	1.02	Nonfarm-related	1.36
Off-farm, farm-related business	1.71	Retired farmer	1.28
Nonfarm related	1.59	Tenant	1.04
Others	1.15	Others	1.55

* Reference transaction (base price index=1): previously used as agricultural land with no residence, expected to be used as agricultural land with no residence, previously family owned, currently family owned, previously owner operated, currently owner operated, active farmer-seller, buyers holding farm-related occupation.

Table 1 lists the classifications under each of the categories. Each entry denotes an index showing how deviations from a base set of characteristics influence land prices. Since the entries in each category are mostly self-explanatory, only a few words are in order.

Previous and future land uses are grouped into agricultural (cropland, pasture, and ranch) and nonagricultural (forest, mineral, recreation, idle, subdivision, commercial or industrial, and other uses). Land with buildings is also differentiated because buildings included in land sales are not often separated in value. Land ownership is separated into family (sole proprietors, husband and wife, family corporations, and family partnerships) and nonfamily (nonfamily corporations, nonfamily partnerships, public organizations, and others).

The reference transaction (base price index=1), upon which the entries in table 1 are based, has the following characteristics. The land includes no current residence and also no future plan to add a residence. Its previous and expected use is for agricultural purposes. Buyers and sellers are family owners and owner operators. Sellers are active farmers and buyers are engaged in farm-related occupations. Transactions with all of these characteristics are the base price trans-

action used in table 1. The index value for this type of transaction is 1.0. Any deviation from this set of characteristics yields a different price index.

Measuring the Price Effects of Characteristics

An index value greater (less) than one relates the increased (decreased) per acre price effect of the associated entry, an entry deviation compared to the reference characteristics. For instance, the value 1.02 in the entry of retired farmer-seller indicates that the per acre price is 2 percent higher than the reference price when the seller is a retired farmer instead of an active farmer.

When two or more characteristics diverge from the set of reference characteristics, the total price effect can be obtained by multiplying the associated index values. For instance, when the seller's occupation is an off-farm, farm-related business, sales occur at prices averaging 71 percent higher than the reference transaction. The index value is 1.71. However, when the seller holds an off-farm occupation, he or she may not operate the land. Suppose the land was operated by a tenant. When the price effect of tenant

operation (index value .64) is combined with that of the seller's off-farm, farm-related occupation, the overall land price index becomes $1.09 = (.64)(1.71)$. Keeping this interpretation in mind, **some** highlights of table 1 **are** presented.

Occupation: When the buyer is **a** retired farmer or has a non-farm occupation, transaction prices will be higher than the reference transaction. This tendency is also observed in the seller's case. Any seller's occupation other than active farming is positively related to price. One explanation may emerge from the possible correlation between nonfarmer-sellers and urban proximity. Nonfarmer-sellers **are** likely, on average, **to** own land nearer urban **areas** or to sell smaller parcels with residences, which in both cases increases the per acre price.

Operator Status: For both sellers and buyers, owner operation shows much stronger price effects than nonowner operation. Among nonowner operator status prior to sale, tenant operation appears to have negative effects on farmland prices.

Ownership: Family vs. nonfamily ownership exhibits opposite price effects in sellers' and buyers' cases. Sellers and buyers with family ownership obtain higher and lower prices, respectively. This result appears reasonable because information exchange is likely to be efficient and effective among family ownership.

Land Use: Future land **use** plays **a** important role in determining land price. When the buyer anticipates nonagricultural **use** of land, the land price tends to be significantly higher than it would if continuing agricultural **use** were forecast. However, this is not the case with respect to the previous use: agricultural land converted from nonagricultural use is associated with **a** lower farmland price. When buildings are included (or expected to be included) in land transactions, the per acre price is, **as** expected, higher.

Land Prices Continue To Adjust **as The Rural Economy Evolves**

U.S. agriculture has shown **a** increasing trend toward part-time farming **as** well as large-scale commercialized farming. As the rural economy adjusts to these changes, farmland prices continue to evolve. Transactor characteristics have been overlooked **as** **a** source for price variations in previous land studies. This study, which explicitly recognizes various farm sector characterizations **as** important farmland price

determinants, could be useful in addressing the implications of rural change on farmland prices.

FOOTNOTES

* Agricultural economist, Inputs, Technology, and Productivity Branch, Resources and Technology Division, Economic Research Service. The author is greatly indebted to Fred Kuchler for his extensive editorial help. Appreciation also goes to Gene Wunderlich, John Reilly, and Bob Boxley who reviewed the article.

1/ Bruce Larson and Hyunok Lee, "An Empirical Investigation of Transactor Characteristics and Land Prices," Selected paper in the 1989 AAEA meeting.

2/ Empirical estimation relies **on** statistical methods. Ordinary least squares are applied to the model where the dependent variable is per **acre** land prices and independent variables **are** various transaction characteristics listed in table 1. Characteristics **are** represented by zero/one-dummy variables in the estimated equation. As **a** simple approximation to the relationship between land prices and characteristics, Cobb-Douglas functional form is used under the assumption that each characteristic influences the land price independently.

3/ As a simple approximation for land quality, a State-level land quality index by Peterson (American Journal of Agricultural Economics, 68., 1986) is used in the analysis.

4/ The Rural Land Transfer Survey, conducted by the U.S. Department of Agriculture in 1987 for land transfers during 1984-1986, contains information **on** rural land transferred and the characteristics of the transferees in 38 States. Of the total land survey sample (7,232 observations), a subset of 1,996 observations **are** used in this study.

5/ At least 90 percent of the land transferred is used **as** agricultural land, range, or rural residence immediately after the sale.

Long Run Determinants of Land Values

by Robbin Shoemaker

Abstract: Agricultural land values have increased 75 percent since the end of World War II even though the inflation adjusted prices of agricultural products have fallen over this period. Important factors outside the agricultural sector have acted to increase land values.

Keywords: Land values, technological progress, national income and wealth

Introduction

U.S. agricultural land values have increased 75 percent in real terms (adjusted for inflation) from 1947 to 1987. At the same time real agricultural commodity prices declined 60 percent. Commodity prices fall as long as growth in agricultural supplies exceeds growth in their demand. Historically we have observed both increases in supply and demand of agricultural products, which results in the growth of total return to agricultural assets and increasing land values. This paper examines the reasons for the growth in land values with a long run perspective.

Factors That Determine Land Values

It is generally said that land values represent the present discounted value of the expected future income earned from land. This definition consists of three parts, (1) the income earning or productive capacity of the land, (2) the expectations of those earnings, and (3) discounting those earnings from the future back to the present. Land values correspond to land earnings simply because a person is not expected to pay more for a piece of land than what it could earn. Earnings depend on commodity prices and the land's productivity. Higher valued commodities positively influence land values as does more highly productive land. Changes in the expectation of commodity prices cause the value of land to change, i.e., capital gains or losses.

Expectations are crucial for determining land values. Since buyers cannot know with certainty what the future holds for commodity prices and other factors that determine land returns, they must make their own forecasts. The types of expectations people have can affect land values. Expectations of future prices based solely on current or recent prices can be erroneous because they may not distinguish between temporary changes and more permanent ones.

For example, increased returns due to a drought should not be expected to affect land values because the higher returns are only transitory, i.e., when the drought ends, returns should return to normal. Permanent improvements in the quality of a parcel of land would increase its value because the increased productivity should raise expectation of future returns. Farm programs that support and stabilize commod-

ity prices may add value to land if landowners expect the programs to continue.

While land values often reflect the income from the current use of the land, sometimes the expected value of alternate uses is incorporated into its price. For example, in the Northeast, land values often are high, reflecting future development potential.

The above factors determine land values directly. A fuller understanding of agricultural land values requires an examination of the factors that determine or affect agricultural commodity prices and productivity. Agriculture must also be viewed in the broader context of the national economy.

Background

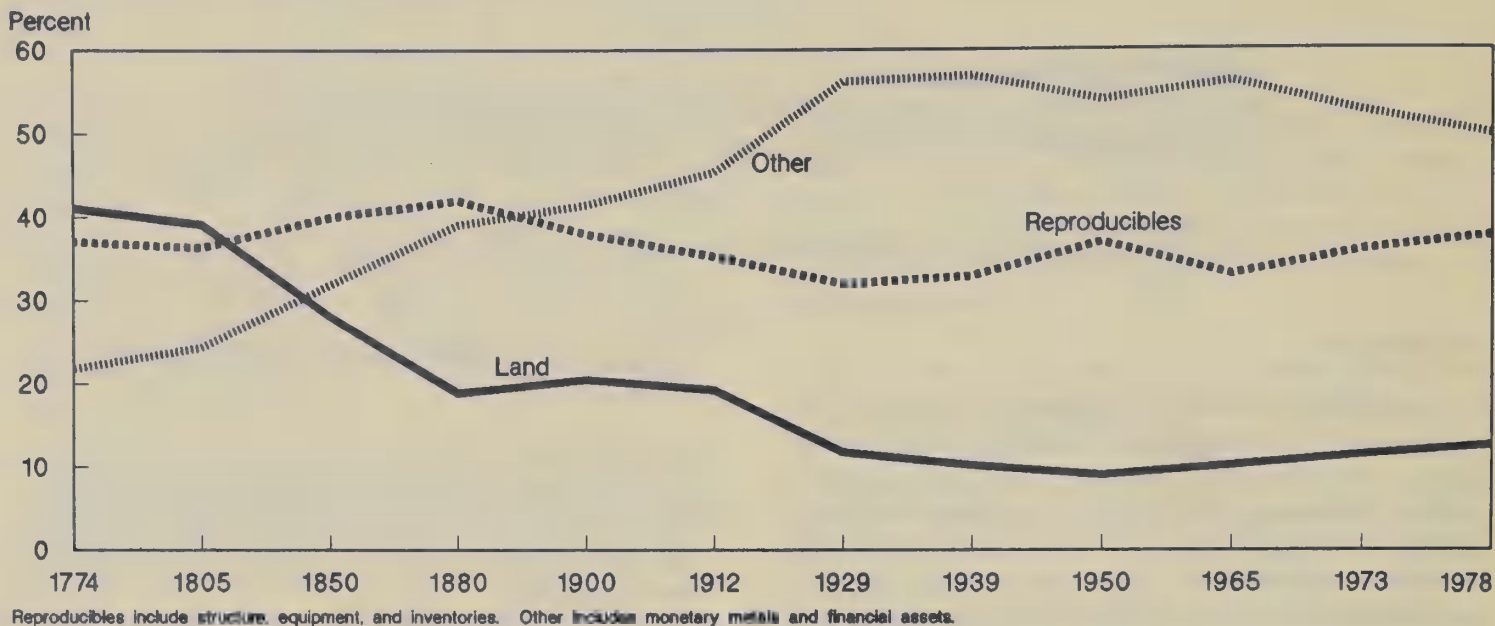
Technological progress has played an important role in the evolution of land values and general economic growth. Malthus, writing in the 1800's, predicted economic collapse because the population constantly expands in the face of finite resources with which to provide for ever increasing demand. The finiteness and exhaustibility of resources could only lead to a decline in the average standard of living. Early writers predicted ever increasing rents to land (see box on rents) because the quantity of arable land is finite and land is a fixed resource. Demand for products of the land from a growing population would only be transferred into increasing land rents and values.

But while real land values have risen over time as a consequence of population growth, per capita economic growth has been considerable despite the finiteness of land resources. Technological improvements, the ability to substitute other inputs (fertilizers, chemicals, machinery) for land, and to a lesser extent economies of scale overcome what appeared to Malthus to be unavoidable limits on population and economic growth.

Agriculture In National Economic Growth

Agriculture has always been a major source of wealth in the early phases of economic growth. Figure 1 shows that land was a primary source of wealth and a major input in aggregate production early in the economic development of the

Figure 1
Distribution of Total U.S. Wealth



United States. When the United States claimed independence from England, land comprised approximately 41 percent of its total national wealth, whereas now it represents only 12 percent (2), (numbers in parenthesis indicate references at the end of the text). Part of the decline of the land's share of total national wealth has been due to agricultural production's declining importance in the GNP. In the early part of the 1800's, agriculture represented approximately 70 percent of national output. By the turn of the century it had fallen to a little over 30 percent. In 1986, agricultural output represented only 2.7 percent (6, 7) of GNP.

Agriculture's declining share of GNP results from overall economic growth. With economic growth comes increased production possibilities for both farm and nonfarm goods. Slower population growth, and ultimately a slower growth in demand for agricultural output, coupled with a desire for more nonfarm output, diminishes agriculture's claim on all of society's resources. And, as society becomes increasingly affluent, the demand for food as a proportion of total consumer demand declines, reinforcing this trend. U.S. food consumption as a percent of disposable income fell from approximately 24 percent in 1929 to 12 percent in 1987 (5).

The inevitable result of this trend is the decline in real agricultural commodity prices (see figure 2) and the consequent decline in the share of total inputs allocated to generate farm products. The measure of that decline is the fall in payments to farm resources, or farm income, as a percent of national income. Table 1 shows the steady drop in farm income's share of total national income. Farming's share of national income has fallen 75 percent since the end of World War II. In contrast, it took almost 100 years, from 1800 to 1900, for the share to fall 50 percent, from 43 to 20 percent. So, while

in absolute terms farm income has grown, in relative terms its share of total national income has declined. This decline documents the decline in the growth of resources devoted to producing food.

The share of land in agricultural production is falling relative to that of other inputs, further diminishing its overall relative importance to society as a source of wealth. Whenever the relative importance of agriculture in the economy diminishes and other factors are substituted for land in farming, the fall in the importance of land and agricultural production is accelerated.

The Role of Technological Change

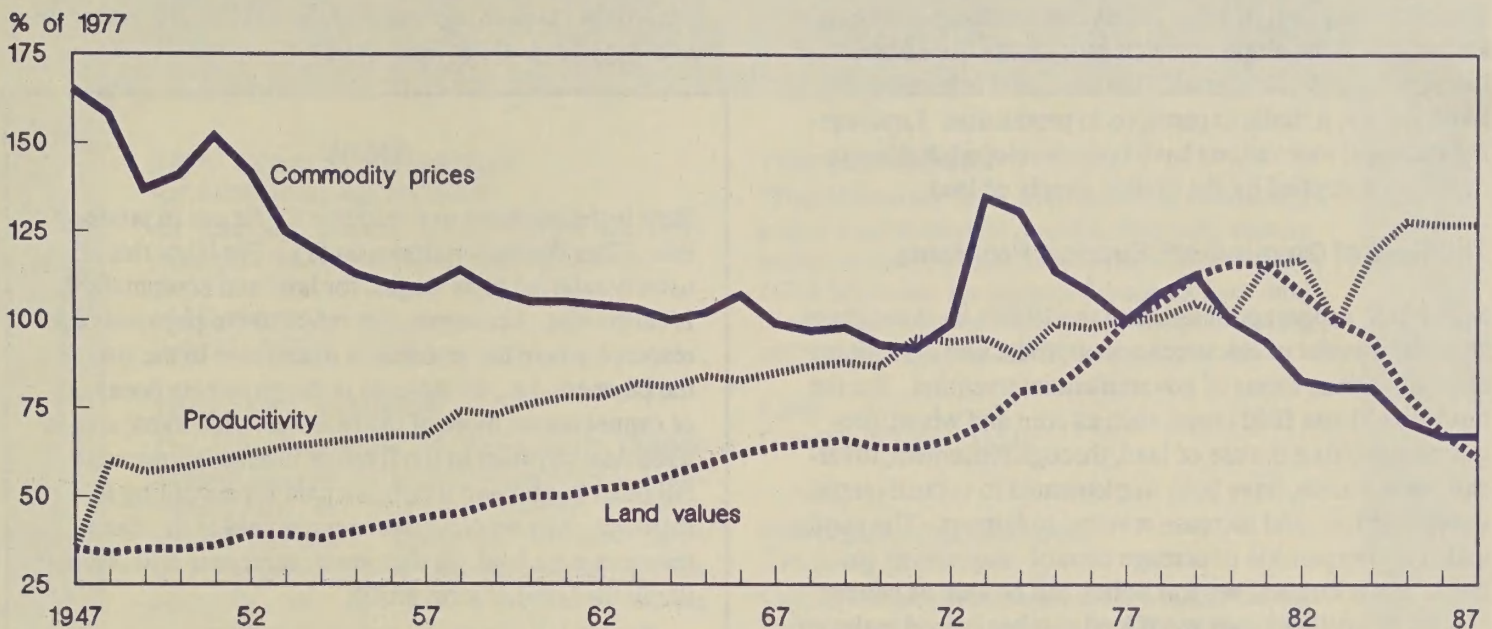
In spite of agriculture's loss of prominence in national income and land's reduced share in agricultural income, the real

Table 1 --National income of private industries, 1799-1987

Year	Total national income	Farm national income	Farm income as share of total
	\$billion		Percent
1799	0.7	0.3	42.9
1849	2.3	0.7	30.4
1879	6.6	1.4	21.2
1900	14.6	3.0	20.5
1920	61.0	10.6	17.4
1929	86.4	8.4	9.7
1939	64.2	5.9	9.2
1949	215.2	16.1	7.5
1959	409.2	14.6	3.6
1969	798.1	21.2	2.7
1979	2,047.3	53.4	2.6
1983	2,719.5	41.7	1.5
1987	3,678.7	66.1	1.8

Sources: (6, 7)

Figure 2

Agricultural Prices, Productivity and Land Values

value of land has increased. The continued rise in agricultural land values can be attributed to population growth, the overall increases in national wealth associated with economic growth, and the effects of technological change in the agricultural. Technological change in agriculture results in the need for fewer resources by the agricultural sector (e.g., labor) and permits these resources to go to other sectors of the economy, aiding overall economic growth.

Generally we think technological change acts to offset land value increases by mitigating the finiteness of land and the pressures of population growth as envisioned by Malthus. Technological change also increases the supply of agricultural products over time resulting in declining agricultural prices. But, land values rise despite these supply-side effects of technological change. Population growth, the growth in national wealth and income, and rising export demand increase the demands for agricultural products. But as long as growth in supply exceeds growth in demand, real commodity prices will fall. But with increases in both supply and demand, the total return to agricultural assets will rise (even though these returns as a share of national income decline). The net results are lower commodity prices, but the total returns to agricultural assets rise. Over time this rise in real returns results in higher land values.

Technological change can increase land values by increasing our international competitiveness. Since technological change lowers the costs of production, products can be sold at a lower price. By selling products at a price lower than other countries we are able to capture a larger share of the world market. A larger market share results in increased returns and higher land values.

In the U.S. real GNP has grown at an average annual rate of nearly 4.5 percent from 1947 to 1987 while population growth has only been 1.3 percent per year (table 2). These two rates imply real income per capita has risen over this period, which in turn implies an increase in real national wealth. Table 2 also shows that farm productivity and real returns to farm assets have risen, while the index of all farm product prices has declined. Therefore, in spite of the decline in real commodity prices, land values have increased, apparently due to the continued increases in productivity and overall increases in demand.

In U.S. agricultural production, technical change has reduced the need for labor and land, and has increased the use of agricultural chemicals and farm machinery. The shares of capital and labor appear to have changed more relative to land and material inputs (seeds, chemicals, etc.), but they have moved in opposite directions. Capital has increased while labor has declined. The relative costs of these factors or the constraints they place on production are the sources of these technical changes.

Table 2--Real growth rates of various important variables, 1947-1987 1/

	Percent
Aggregate	
Gross national product	4.47
Population	1.33
Farm	
Farm productivity	1.96
Farm product prices	-1.38
Returns to farm assets	1.90
Land values	2.91

1/ All rates are estimated as, $\ln(P) = a + bT$, where b yields the average annual growth rate of P .

For example, labor wage rates have risen roughly 4 percent a year from 1947 to 1987 compared with an average annual growth of 1.5 percent in the price index for material inputs. The increasing cost of labor relative to materials encourages technological developments that save on the use of labor and increase the use of materials. Because land is in relatively fixed supply, it limits expansions in production. Land-saving technical innovations have been developed that lessen restrictions implied by the limited supply of land.

The Role of Government Support Programs

Major U.S. support policies since the 1950's have sought to slow the transfer of resources out of production agriculture through various forms of government intervention. For the more significant field crops, such as corn and wheat, programs restricting the use of land, through retirement, diversion, or set-aside, have been implemented to control output, stabilize prices, and increase revenue to farmers. The continuation and expansion of acreage control programs as elements of agricultural support policy can be seen as having created an artificial scarcity of land that has helped maintain or mitigate the decline in the share of agricultural land in production (4). But, this artificial scarcity of land has also spurred more technologies that were land-saving than would otherwise have been the case.

The benefits of acreage control programs tend to accrue to landowners rather than to providers of labor or capital, because of the relative fixity of the agricultural land supply. The right to receive payments as a program participant is partially capitalized into the current value of the land. Consequently, program benefits represent windfall gains to current landowners, who then have the incentive to lobby to continue these programs.

Conclusion

What are consequences of technological developments and possible directions for agricultural policy for future agricultural land values? Most recent technological innovations have centered around the developments in biotechnology. These emerging technologies are projected to increase crop output by as much as 25 percent by the year 2000 for some major crops (4). With U.S. per capita demand for agricultural products growing less rapidly and uncertain export demand, such an increase in supply could only result in further declines in commodity prices. Federal support programs, if left in their present status, could mitigate that decline in the short run by providing a minimum support level.

But, in the long run support programs tend to inhibit the transfer of resources out of agriculture, which causes farm based returns to decline. Reforming farm programs, which will be debated in the 1990 farm bill discussions, could result in a more market-oriented farm sector. The reforms

would increase the benefits of biotechnical advances to producers and consumers. With the appropriate adjustment of farm resources in response to market signals, productivity gains would result in increased profits and wealth rather than excess supplies and depressed prices.

Rent

Rent is the payment to a resource for its use in production, [This discussion draws on (1).] For labor this is usually referred to as wages, for land and equipment it is called rent. Economic rent refers to the payment of a resource where the resource is insensitive to the size of the payment, i.e., an increase in the payments does not or cannot attract more of the resource. Economic rent is a residual payment to the fixed or insensitive resource. All other productive inputs are paid for according to their use. Any receipts left over are paid to the fixed resource, e.g., land. In this sense, economic rent is similar to the familiar term profit.

It is often assumed that high rents result in high commodity prices. That is, that increased rents raise the costs of production which in turn increases commodity prices. This is an incorrect notion of rent. Since rents are determined residually, they are determined by commodity prices rather than the other way around.

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